334

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

CONTENTS

TRADE NAME	MODEL	SET AND FOLDER No.
CBS-Columbia	6K321, U, 6K322, U, 6K327U, 6K328U, 6KR323, 6KR324, 6KR327, 6KR328, 6T301, U, 6T303, U, 6T304, U, 6TR305, 6TR306 (Ch. 2001, 2, 3) Tel. Rec.	334-2
Coronado	TV1-9017A, B, TV1-9135A, B, TV1-9137A, B, TV1-9139A, B Tel. Rec. Prod. Chg. Bul. 171	334-1
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Crosley	JM-8BG, BK, BN, GN, MN, WE (Ch. R102)	334-4
Dumont	Chassis RA-356, RA-357 Tel. Rec.	334-5
Motorola	396, 396-12	334-6
Newcomb	CO-100	334-7
Packard-Bell	21SC1, -U, 21ST1, -U, 24ST1, -U (Ch. 88S1, -U) Tel. Rec. Prod. Chg. Bul. 171	334-1
RCA Victor	3-BX-671 (Ch. RC-1125), 7-BX-10 (Ch. RC-1125B) Prod. Chg. Bul. 171	334-1
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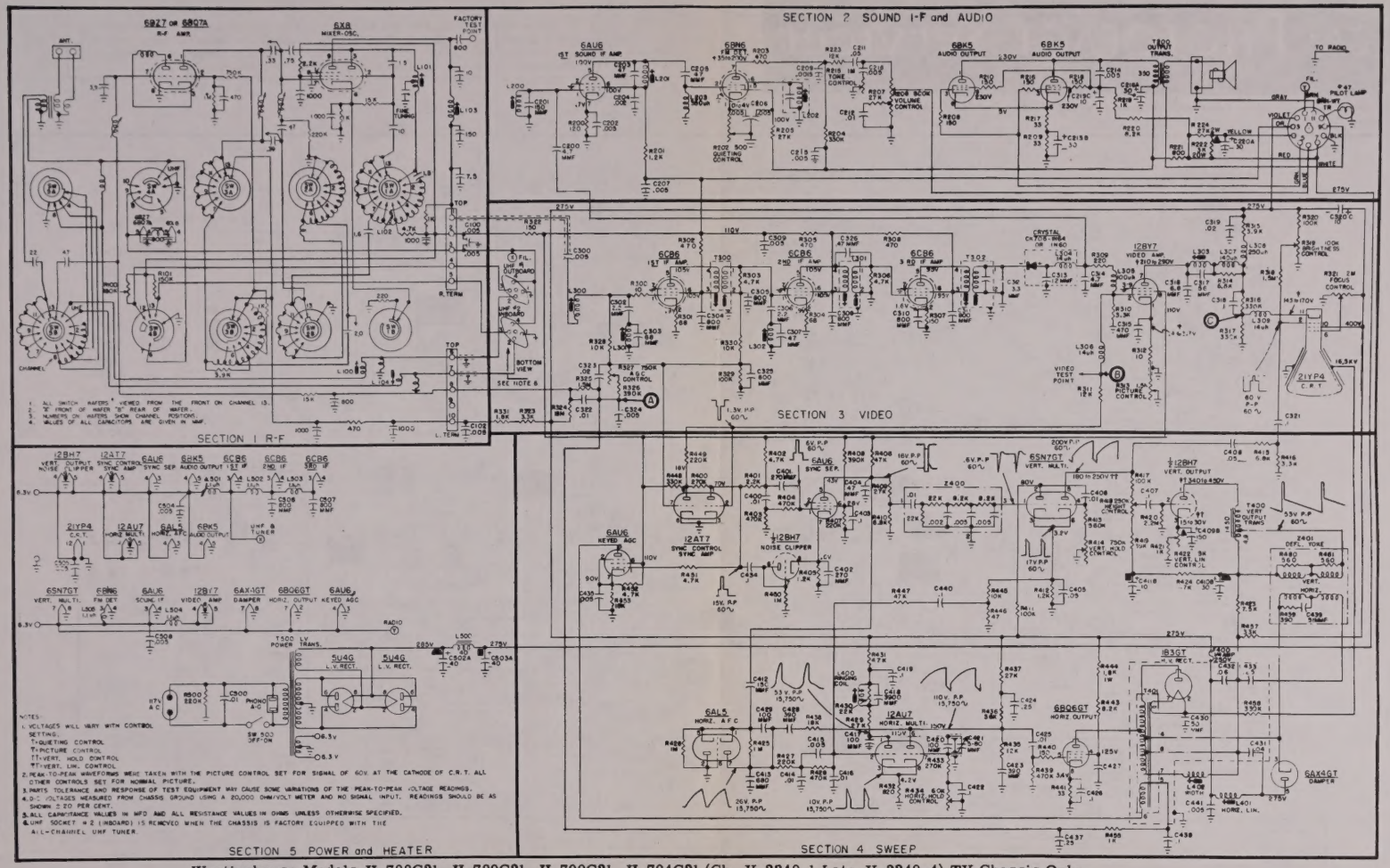
Zenith	HFX1284E, HFX1290R	334-12
Zenith	Y2229R, RU, Y2230E, EU, R, RU, Y2254M, MU, Y2256E, EU, R, RU, Y2263R, RU (Ch. 19Y22, U) Tel. Rec.	334-13
Crosley	AC-10B, AC-10M, AH-10B AT-10B, AT-10M, (Ch. 487)	334-14-S
RCA Victor	14-S-7052, 14-S-7070, 14-S-7071, 14-S-7074 (Ch. KCS 102B)	334-14-S
Westinghouse	H-788C21, 789C21, 790C21 (Ch. V2247-1 V-2249-4)	Servicer
Spartan	(Ch. 24U213) Model 20312, 20313, 21322, 21324	"



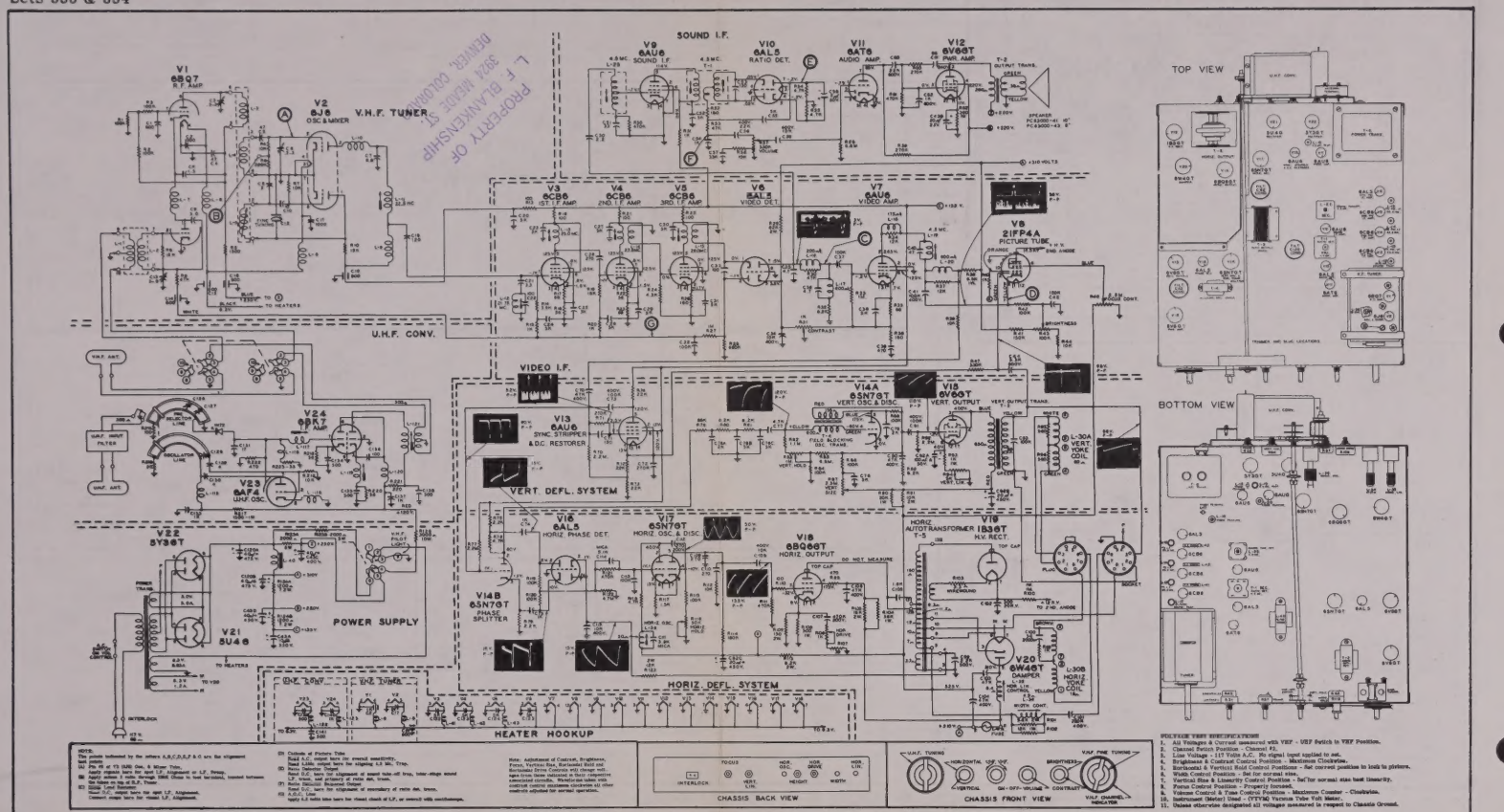
Westinghouse Models H-788C21, H-789C21, H-790C21, H-794C21 (Ch. V-2249-1 Late, V-2249-4) TV Chassis Only

Schematic Diagram Courtesy of Westinghouse Electric Corp.

The PHOTOFACT Servicer

Vol. 34 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ Oct. 15, 1956
Sets 333 & 334

The service information in this Servicer provides data on models which we have been unable to present in PHOTOFACT Folders. The receivers are not in current production; a requirement for PHOTOFACT coverage, and we are therefore presenting schematics and supplementary data that will be of assistance when servicing these models.



PROPERTY OF L. F. BLANKENSHIP 3924 MEADE ST. DENVER, COLORADO

VOLTAGE TEST SPECIFICATIONS

1. All Voltages & Current measured with VEF - VEF Switch in VEF Position.
2. Channel Button Position - Channel #2.
3. Line Voltage - 117 Volts A.C. No signal input applied to set.
4. Brightness & Contrast Control Position - Maximum Clockwise.
5. Horizontal & Vertical Hold Control Positions - Set correct positions to lock in picture.
6. Width Control Position - Set for normal size.
7. Vertical Size & Linearity Control Position - Set for normal size best linearity.
8. Focus Control Position - Set for best picture.
9. Volume Control & Tone Control Position - Maximum Counter - Clockwise.
10. Instrument (Meter) Used - (VTVM) Vacuum Tube Volt Meter.
11. Unless otherwise designated all voltages measured in respect to Chassis Ground.

Schematic Diagram Courtesy of Sparton Div. of Sparks-Withington Co.

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L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 14 IN SET 228

RCA VICTOR MODELS 3-BX-671 (Ch. RC-1125), 7-BX-10 (Ch. RC-1125B)

RCA Victor Model 3-BX-671 (Ch. RC-1125) was covered in Photofact Folder 14 — Set 228.

CORRECTION

The dial cord drive given in Photofact Folder 14 — Set 228 is in error. The correct dial cord drive is given in Fig. 1.

Model 7-BX-10 (Ch. RC-1125B) is electrically identical, except for the power supply. A partial schematic showing the new circuit is given in Fig. 2.

Alignment is essentially the same as given for Ch. RC-1125 in Photofact Folder 14 — Set 228.

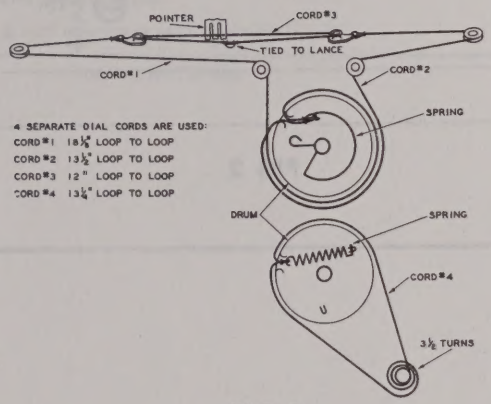

FIG 1

(Con't on reverse side)

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 9 IN SET 312

PACKARD-BELL MODELS 21SC1, 21ST1, 24ST1, 21S1-U, 21ST1-U, 24ST1-U (Ch. 88S1, U)

Packard-Bell Models 21SC1, 21ST1, 24ST1, 21SC1-U, 21ST1-U and 24ST1-U (Ch. 88S1, U) were covered in Photofact Folder 9 - Set 312.

The following production changes were made in late production. These changes cover all models.

IF TUBES CHANGED

V3, 1st. video IF and V4, 2nd. video IF are changed from 6CB6 to 6DE6.

TO IMPROVE AGC PERFORMANCE

M6, local-distant switch, is replaced with an AGC control. A partial schematic showing the new circuit is given on the reverse side.

COMPONENT CHANGES

A 220MMF capacitor is added from pin 1 of V10 to ground.

C56 is decreased from 120MMF to 68MMF.

A 560Ω resistor is added from pins 2 and 6 of V12 to ground.

R73 is decreased from 1Meg to 470K.

A .0047MFD @ 600V capacitor is added from the junction of R73, C56, R72 and C57 to C73.

(Con't on reverse side)

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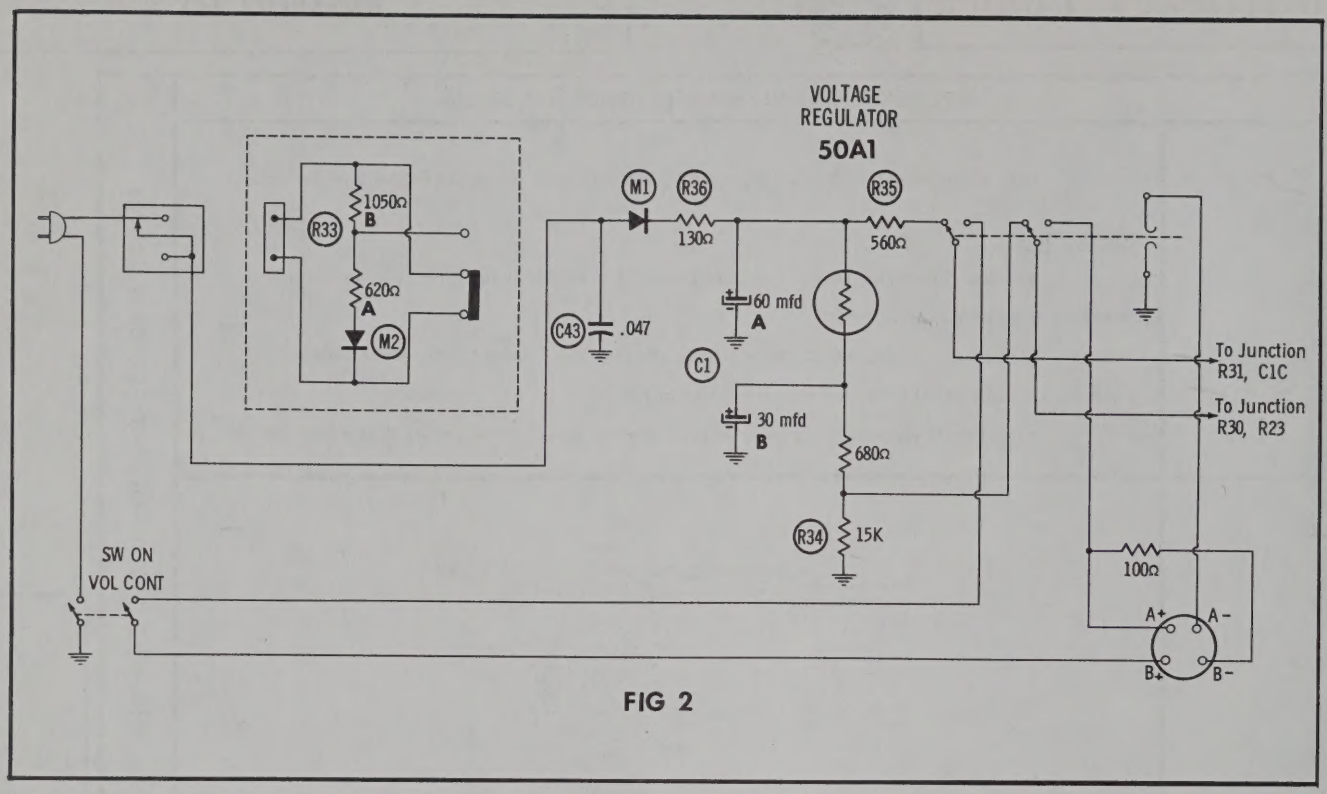
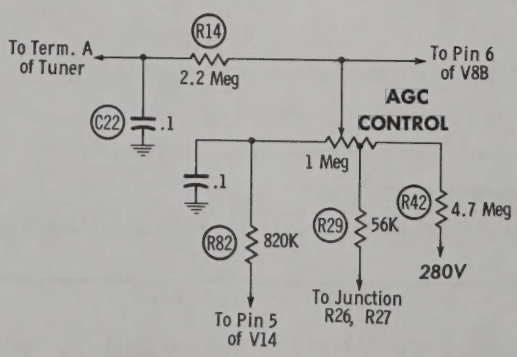

VOLTAGE
REGULATOR
50A1
R33
1050Ω
B
620Ω
A
M2
M1
R36
130Ω
R35
560Ω
C43
.047
60 mfd
A
C1
30 mfd
B
680Ω
R34
15K
100Ω
SW ON
VOL CONT
To Junction
R31, C1C
To Junction
R30, R23
A+
A-
B+
B-

FIG 2


R14
To Term. A
of Tuner
2.2 Meg
To Pin 6
of V8B
AGC
CONTROL
C22
.1
1 Meg
.1
R82
820K
R29
56K
R42
4.7 Meg
280V
To Pin 5
of V14
To Junction
R26, R27

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 5 IN SET 276

CORONADO MODELS TV1-9017A, TV1-9017B, TV1-9135A, TV1-9135B, TV1-9137A, TV1-9137B, TV1-9139A, TV1-9139B

Coronado Models TV1-9017A, TV1-9017B, TV1-9135A and TV1-9135B were covered in Photofact Folder 5 — Set 276.

Coronado Models TV1-9137A, TV1-9137B, TV1-9139A and TV1-9139B were covered in Production Change Bulletin 130 — Set 289-1.

The following production changes were made in late production.

Code 015

NEW VHF TUNER

A new tuner (part #211-24496) is incorporated. A schematic for the new tuner is given on the reverse side.

COMPONENT CHANGES

C4 and C5 are omitted.

Code 905

TO ELIMINATE 4.5MC INTERFERENCE

R39 is increased from 100K to 1Meg.

R40 is decreased from 33K to 12K.

A 1000MMF @ 500V capacitor is added in parallel with R87.

(Con't on reverse side)

PROPERTY OF
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3924 MEADE ST.
DENVER, COLORADO

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 9 IN SET 315

RCA VICTOR MODELS 17-PT-6962, 17-PT-6962U, 17-S-6022, 17-S-6022K, 17-S-6022KU, 17-S-6022U, 17-S-6025, 17-S-6025K, 17-S-6025KU, 17-S-6025U, 17-S-6026K, 17-S-6027, 17-S-6027K, 17-S-6027KU, 17-S-6027U (Ch. KCS 94, KCS 94A)

RCA Victor Models 17-PT-6962, 17-PT-6962U, 17-S-6022, 17-S-6022U, 17-S-6025, 17-S-6025U, 17-S-6027 and 17-S-6027U (Ch. KCS94 and KCS94A) were covered in Photofact Folder 9 — Set 315.

Models 17-S-6022K, 17-S-6022KU, 17-S-6025K, 17-S-6025KU, 17-S-6026K, 17-S-6027K and 17-S-6027KU (Ch. KCS94 and KCS94A) are added along with late production changes, with the publication of this bulletin.

COMPONENT CHANGES

A .01MFD capacitor is wired in parallel with R47.

C60 is decreased from .01MFD to .0022MFD.

A .01MFD capacitor is added from pin 7 of V7A to ground.

R48 is decreased from 1000Ω to 100Ω.

R54 is decreased from 330K to 68K.

R24 is 33K when L40 is a plug in type coil.

R71 is increased from 470K to 820K.

An 82Ω resistor or a 47Ω resistor is added from pin 7 of V7A to ground.

A 6800Ω resistor is added from the junction of R25 and R31 to the junction of C36 and R28.

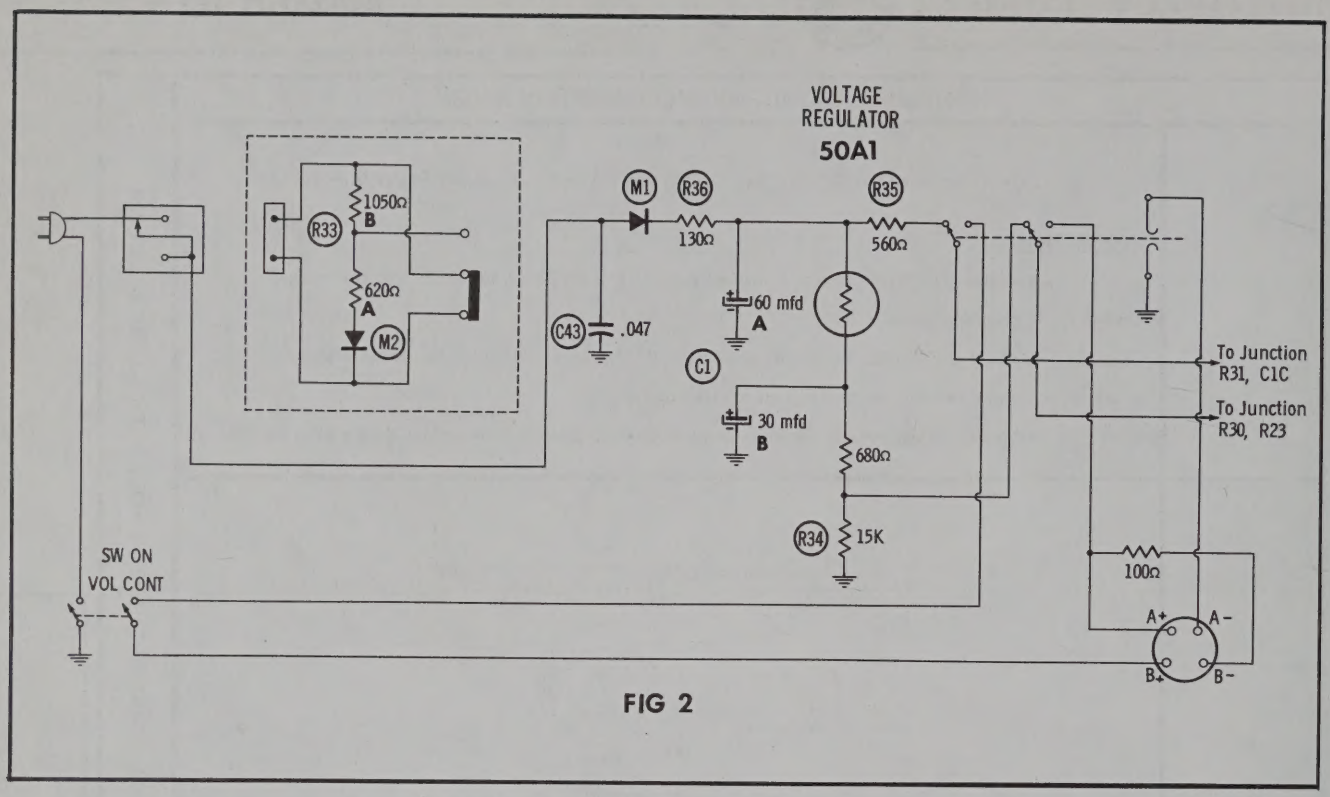
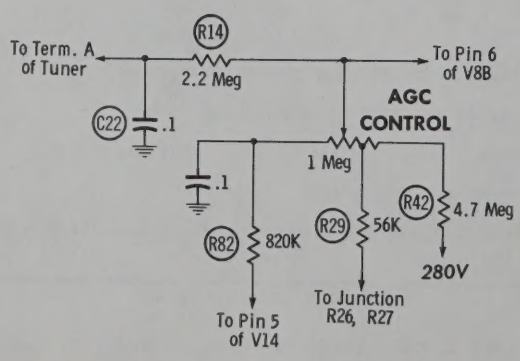

VOLTAGE
REGULATOR
50A1
M1
R36
130Ω
R35
560Ω
1050Ω
B
R33
620Ω
A
M2
C43
.047
60 mfd
A
C1
30 mfd
B
680Ω
R34
15K
100Ω
To Junction
R31, C1C
To Junction
R30, R23
SW ON
VOL CONT
A+
A-
B+
B-

FIG 2


R14
To Term. A
of Tuner
2.2 Meg
To Pin 6
of V8B
AGC
CONTROL
C22
.1
1 Meg
.1
R42
4.7 Meg
R82
820K
R29
56K
280V
To Junction
R26, R27
To Pin 5
of V14

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 5 IN SET 276

CORONADO MODELS TV1-9017A, TV1-9017B, TV1-9135A, TV1-9135B, TV1-9137A, TV1-9137B, TV1-9139A, TV1-9139B

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A 1000MMF @ 500V capacitor is added in parallel with R87.

(Con't on reverse side)

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 9 IN SET 315

RCA VICTOR MODELS 17-PT-6962, 17-PT-6962U, 17-S-6022, 17-S-6022K, 17-S-6022KU, 17-S-6022U, 17-S-6025, 17-S-6025K, 17-S-6025KU, 17-S-6025U, 17-S-6026K, 17-S-6027, 17-S-6027K, 17-S-6027KU, 17-S-6027U (Ch. KCS 94, KCS 94A)

RCA Victor Models 17-PT-6962, 17-PT-6962U, 17-S-6022, 17-S-6022U, 17-S-6025, 17-S-6025U, 17-S-6027 and 17-S-6027U (Ch. KCS94 and KCS94A) were covered in Photofact Folder 9 — Set 315.

Models 17-S-6022K, 17-S-6022KU, 17-S-6025K, 17-S-6025KU, 17-S-6026K, 17-S-6027K and 17-S-6027KU (Ch. KCS94 and KCS94A) are added along with late production changes, with the publication of this bulletin.

COMPONENT CHANGES

A .01MFD capacitor is wired in parallel with R47.

C60 is decreased from .01MFD to .0022MFD.

A .01MFD capacitor is added from pin 7 of V7A to ground.

R48 is decreased from 1000Ω to 100Ω.

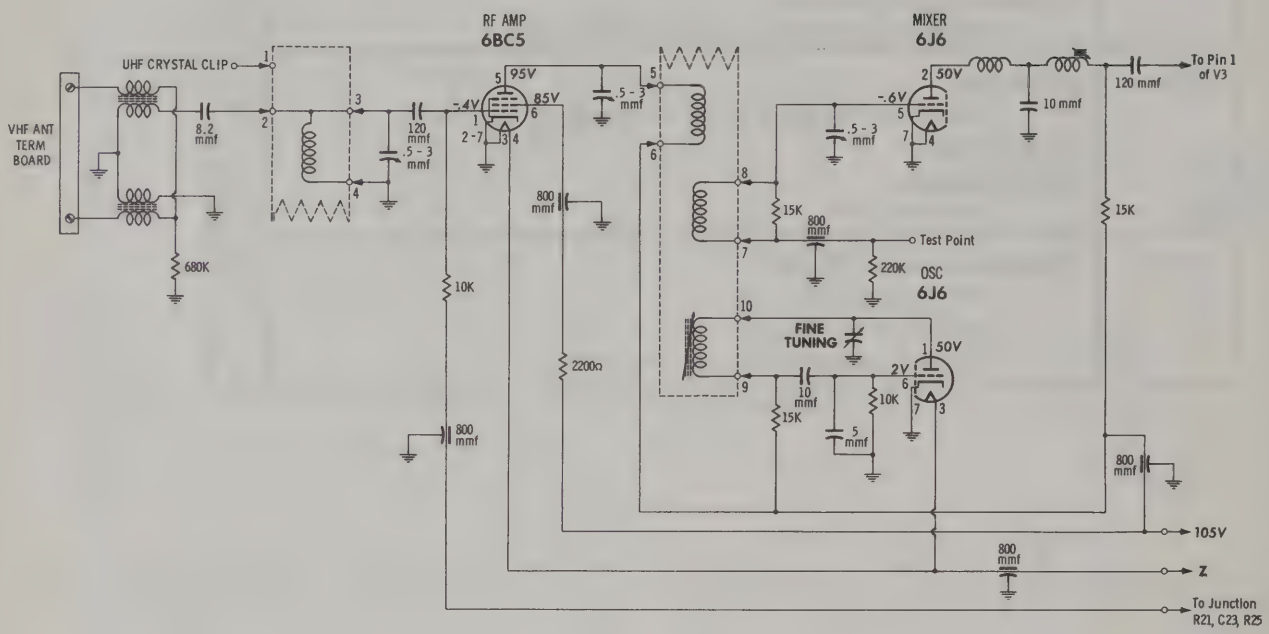
R54 is decreased from 330K to 68K.

R24 is 33K when L40 is a plug in type coil.

R71 is increased from 470K to 820K.

An 82Ω resistor or a 47Ω resistor is added from pin 7 of V7A to ground.

A 6800Ω resistor is added from the junction of R25 and R31 to the junction of C36 and R28.


RF AMP
6BC5
MIXER
6J6
OSC
6J6
UHF CRYSTAL CLIP
VHF ANT TERM BOARD
8.2 mmf
680K
120 mmf
.5 - 3 mmf
95V
85V
-.4V
2-7
.5 - 3 mmf
800 mmf
10K
2200Ω
800 mmf
50V
-.6V
.5 - 3 mmf
10 mmf
120 mmf
To Pin 1 of V3
15K
800 mmf
Test Point
220K
FINE TUNING
50V
2V
10 mmf
15K
10K
5 mmf
800 mmf
800 mmf
105V
Z
To Junction R21, C23, R25

PHOTOFACT* Folder

*TRADE MARK

RETMA MEMBER

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . unless it has been purchased as part of a complete volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

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CBS-COLUMBIA MODEL 6T303 (Ch. 2001)

TRADE NAME	CBS-Columbia	MODELS	CHASSIS
		6K321, 6K322, 6T301, 6T303, 6T304	2001
		6K321U, 6K322U, 6K327U, 6K328U, 6T301U, 6T303U, 6T304U	2002
		6KR323, 6KR324, 6KR327, 6KR328, 6TR305, 6TR306	2003
MANUFACTURER	CBS-Columbia, A Division of Columbia Broadcasting System, Inc., 48-50 34th. St., Long Island City, N.Y.		
TYPE SET	Television Receiver		
TUBES	Sixteen		
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATING 1.36 Amp. @117 Volts AC	
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

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Schematic (TV) 2

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Tube Placement Chart (Bottom View) 8

Tube Placement Chart (Top View) 5

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DISASSEMBLY INSTRUCTIONS

To service tubes, remove rear cover, 5 push-on type control knobs from cabinet top and 2 wing nuts at the upper corners of the cabinet. Tilt the top of chassis back into tube servicing position.

CHASSIS REMOVAL

1. Remove 5 push-on type control knobs from top rear of cabinet and 4 push-on type control knobs from front of cabinet.

2. Remove 4 metal screws. Remove rear cover.

3. Remove 6 metal screws. Remove chassis bottom cover.

4. Remove 2 wing nuts at the upper corners of the chassis, tilt the top of the chassis back into tube servicing position.

5. Remove picture tube socket and HV lead.

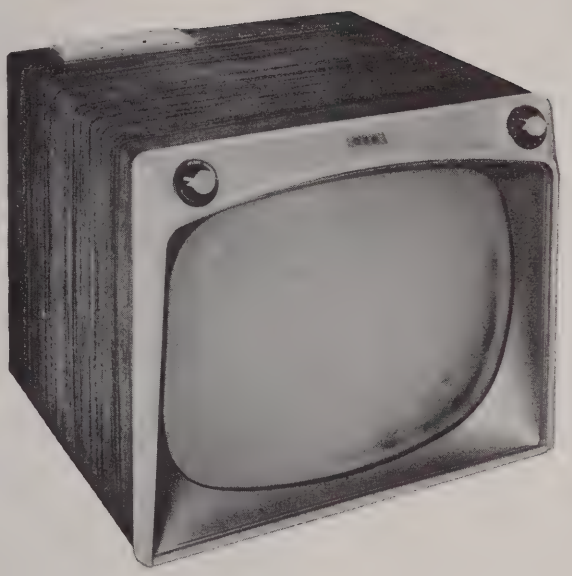
6. Remove volume control from front of cabinet.

7. Remove 2 metal screws from front holding tuner shaft and 4 metal screws holding tuner. Remove tuner.

8. Remove ion trap and yoke assembly.

9. Remove 4 chassis bolts from brackets. Remove chassis.

10. Remove 2 speaker nuts. Remove speaker.



MODEL	CHASSIS
6T303	2001

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removing the channel selector and fine tuning knobs.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 4 metal screws at the bottom front of cabinet holding metal molding. Remove molding and safety glass. Use extreme caution when removing safety glass.

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For adjustment of the horizontal oscillator, it is necessary to remove the rear cover and supply power to the chassis. Adjustment is located on the rear side of the chassis. Set the horizontal hold control at the center of its range and adjust the horizontal frequency slug (L18) until the picture is synchronized horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the AM rejection control (R8) located on rear side of the chassis for maximum sound and MINIMUM buzz.

FUSES

One fuse is used for LV power supply protection. (For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

CBS-COLUMBIA MODELS 6K321, U, 6K322, U, 6K327U, 6K328U, 6KR323, 6KR324, 6KR327, 6KR328, 6T301, U, 6T303, U, 6T304, U, 6TR305, 6TR306 (Ch. 2001, 2, 3)

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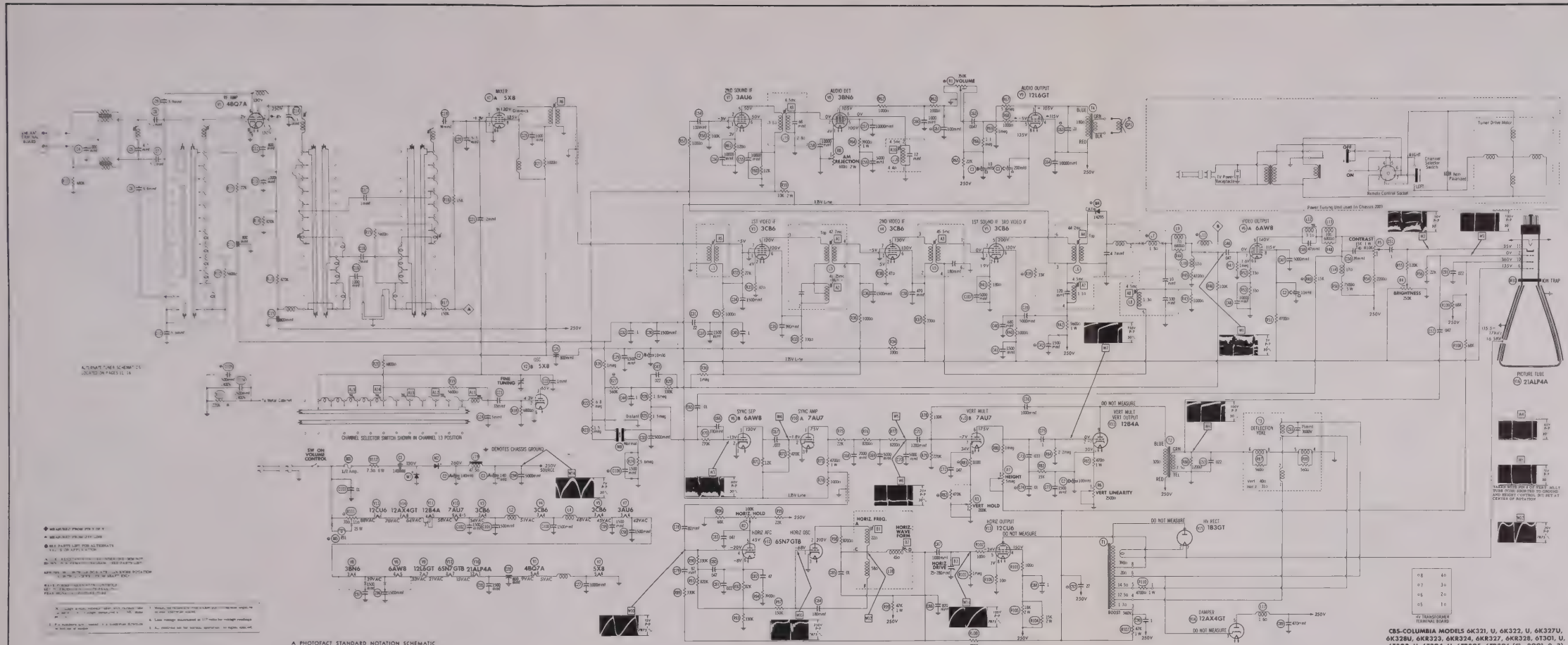
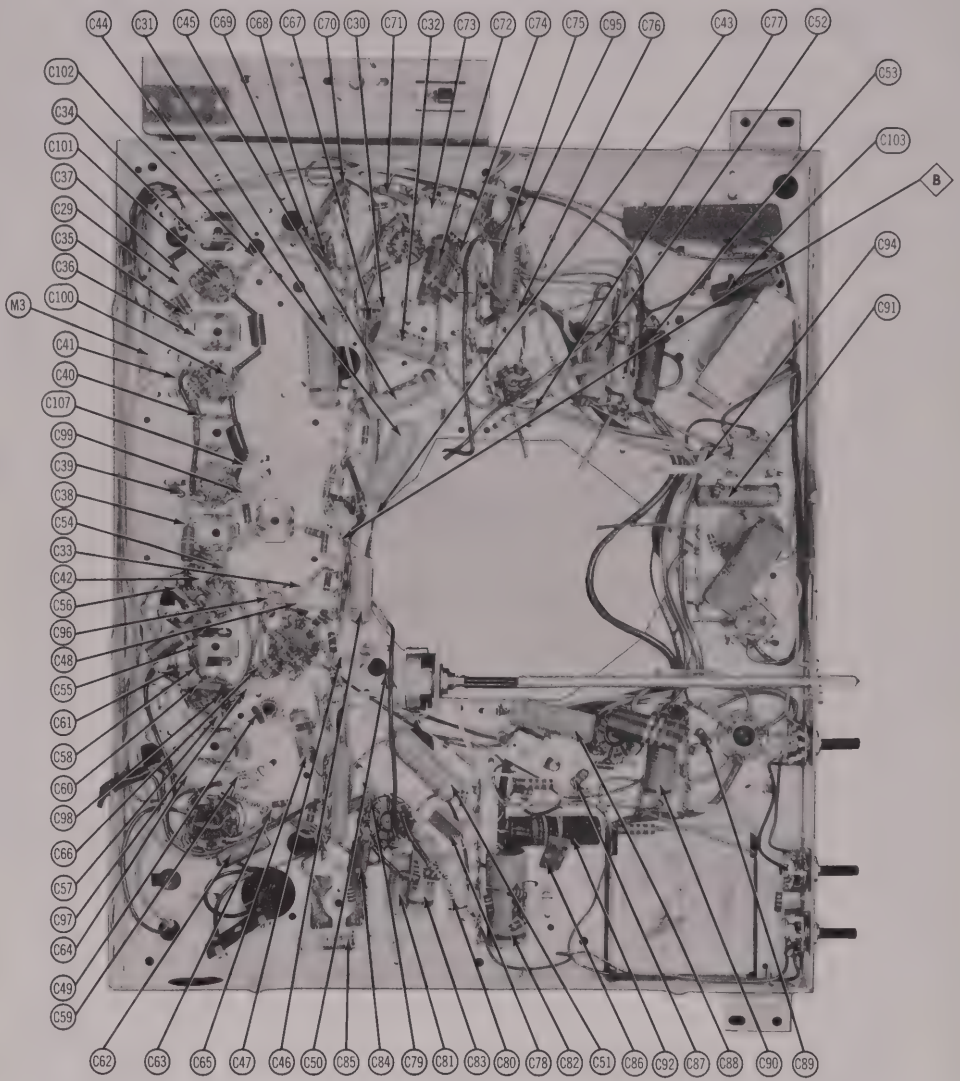

CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
DENOTES CHASSIS GROUND
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1956
CBS-COLUMBIA MODELS 6K321, U, 6K322, U, 6K327U, 6K328U, 6KR323, 6KR324, 6KR327, 6KR328, 6T301, U, 6T303, U, 6T304, U, 6TR305, 6TR306 (Ch. 2001, 2, 3)

CBS-COLUMBIA MODELS 6K321, U, 6K322, U, 6K327U, 6K328U, 6KR323, 6KR324, 6KR327, 6KR328, 6T301, U, 6T303, U, 6T304, U, 6TR305, 6TR306 (Ch. 2001, 2, 3)



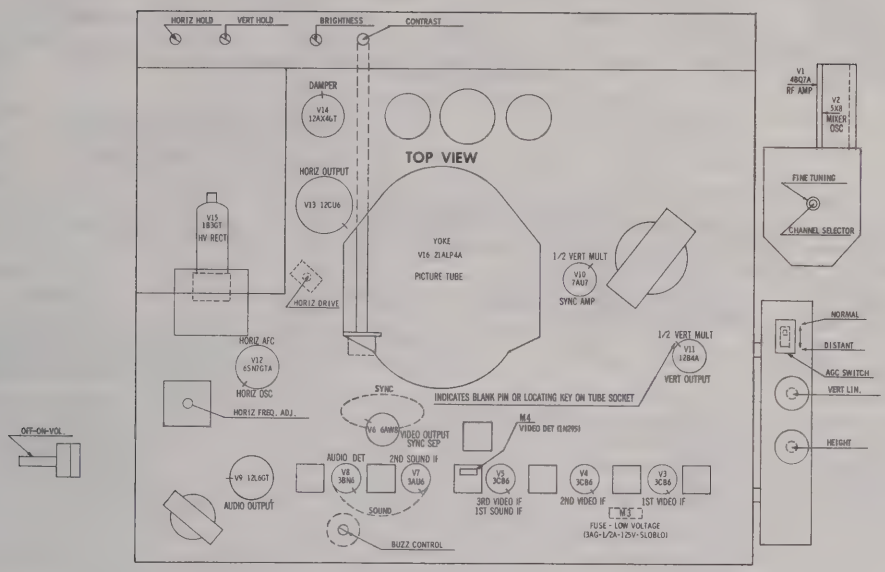
CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

CBS-COLUMBIA MODELS 6K371, U, 6K372, U, 6K372U, 6K324U, 6KR323, 6KR324, 6KR327, 6KR328, 6T301, U, 6T303, U, 6T304, U, 6TR305, 6TR306 (CH. 2001, 2, 3)

CBS-COLUMBIA MODELS 6K321, U, 6K322, U, 6K327U, 6K328U, 6KR322, 6KR324, 6KR327, 6KR328, 67301, U, 67303, U, 67304, U, 67R305, 67R306 (Ch. 3001, 2, 3)

CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

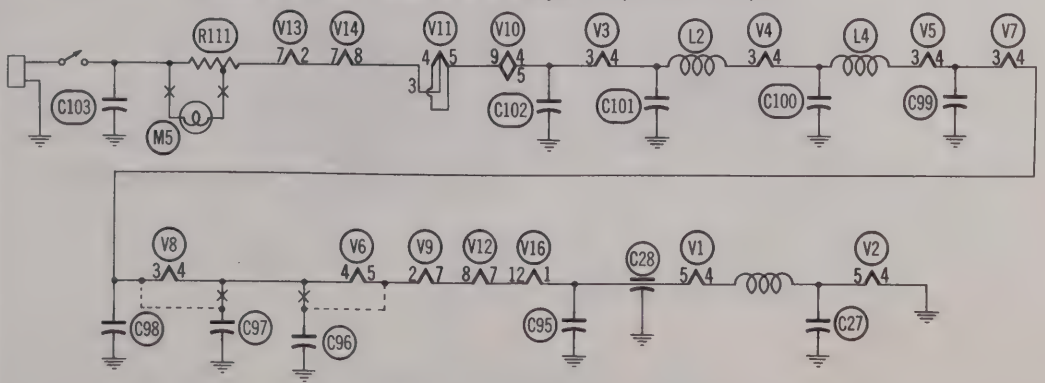
POWER SUPPLY FAILURE
No raster, no sound - **Selenium Rectifiers (M1, M2), Fuse (M3)**

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V2, V3, V4, V5, V9**
No pic, no sound, has snow - **V1, V2, V3**
No pic, has sound, has raster - **V6, V16**
Has pic, no sound - **V5, V7, V8, V9**

SYNC FAILURE
No vert. sync - **V10, V11**
No horiz. sync - **V10, V12**
No vert. or horiz. sync - **V6, V10**

SWEEP FAILURE
No raster, has sound - **V12, V13, V14, V15, V16**
No vertical deflection - **V10, V11**
Poor vert. linearity or foldover - **V10, V11**
Poor horiz. linearity or foldover - **V12, V13, V14**
Narrow picture - **V12, V13, V14 V15, M1, M2**
Vert. off freq. - **V10, V11**
Horiz. off freq. - **V10, V12**

NOTE: Since this receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below).



SET 334 FOLDER 2

CBS-COLUMBIA MODELS 6K321, U, 6K322, U, 6K327U, 6K328U, 6KR323, 6KR324, 6KR327, 6KR328, 6T301, U, 6T303, U, 6T304, U, 6TR305, 6TR306 (Ch. 2001, 2, 3)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by disconnecting the ground lead from the cathode (pin 8) of the 12CU6 horizontal output tube.

VIDEO IF ALIGNMENT

Set local-distant switch to normal position.
Connect the negative lead of a 3 volt bias supply to the ungrounded side of C32. Positive lead to chassis.
Use lowest possible range of VTVM for all steps.
Remove channel 13 oscillator strip from tuner on turret tuner models.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	.001MFD	High side to pin 1 of V3. Low side to chassis.	42.7MC	13	DC probe to pin 8 of test socket. Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	41.25MC	"	"	A2	Adjust for MINIMUM deflection.
3.	"	"	45.5MC	"	"	A3	Adjust for maximum deflection.
4.	"	"	44.2MC	"	"	A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Attenuate sweep generator output to maintain 3 volt peak to peak vertical deflection on the scope.
Leave bias connect to the ungrounded side of C32.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	Direct	High side to ungrounded tube shield floating over osc.-mixer tube. Low side to chassis.	43MC (10MC Swp)	42.45MC 45.75MC	13	Vert. amp. to point Ⓑ. Low side to chassis.	A5, A6	Adjust A5 and A6 to place markers in position as in Fig. 1. If necessary, retouch A1, A3 and A4 for correct response as in Fig. 1.

SOUND IF ALIGNMENT

Increase bias supply to 6 volts and set the local-distant switch to local position.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.01MFD	High side to junction of L9 and L11. Low side to chassis.	4.5MC (400∿ AM 30% Mod)	13	Across audio output transformer secondary.	A7, A8, A9	Adjust for maximum deflection.
7.	"	"	4.5MC (25KC FM)	"	"	A10	Set volume control for approximate center. Adjust A10 for maximum deflection of meter.
8.	"	"	4.5MC (400∿ AM 30% Mod)	"	"	R8	Adjust for MINIMUM deflection. Repeat step 7.

ALTERNATE SOUND IF ALIGNMENT USING ON THE AIR TV SIGNAL

1. Tune the receiver to a strong TV signal and adjust controls for best picture. Set "AM" Rejection" control (R8) at the center of its range. Attenuate signal (remove antenna and/or set local distant switch to local position) until a hiss is heard in the sound. Adjust A7, A8 and A9 for maximum sound.
2. Increase signal level to normal and adjust A10 for maximum sound and minimum buzz.
3. Attenuate signal again and adjust AM Rejection control (R8) for minimum hiss and noise.
4. Increase signal level to normal and rotate the fine tuning control. If buzz is still present, readjust A10 for clearest sound and minimum buzz.

OSCILLATOR ALIGNMENT FOR TUNER #69000771 (GI)

Oscillator adjustment screws are provided for channels 13, 11, 8, 6 and 4. Adjustment of any one channel will effect all other channels below it in that band.
Set the channel selector switch to the highest high band channel (7 thru 13) operating in that area. Adjust the fine tuning so that the hole in the fine tuning drive wheel is in line with the access hole for channel 13 adjustment (A11). Adjust A11 for the best picture and sound on the channel requiring adjustment. Check all other lower channels in the same band. If a lower channel requires adjustment, adjust the corresponding slug. If a slug is not provided for that channel, adjust the next higher channel slug available. Continue this procedure until all higher channels are adjusted.
To adjust the lower band channels (2 thru 6), tune in the highest low band channel requiring adjustment and adjust the slug for that channel. If a slug is not provided for that channel, adjust the next higher channel slug. Continue this procedure until all low band channels are in adjustment.

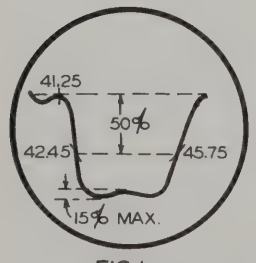


FIG. 1

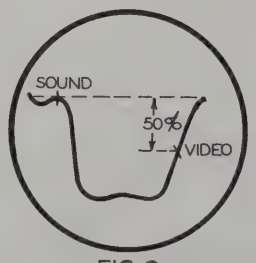
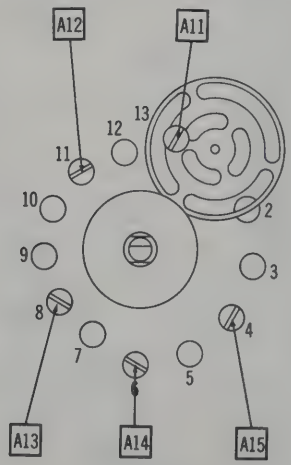


FIG. 2



OSCILLATOR ADJUSTMENTS

ALIGNMENT INSTRUCTIONS (cont)

OSCILLATOR ALIGNMENT FOR TUNERS #69000791 AND 69000821

The oscillator adjustment screws are reached thru a hole just above and to the left of the channels selector shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211. 25MC 215. 75MC	13	Vert. amp. to point Ⓑ. Low side to chassis.	A16	Adjust to place sound marker in trap notch and video marker at 50% as in Fig. 2.
			207MC (10MC Swp)	205. 25MC 209. 75MC	12		A17	
			201MC (10MC Swp)	199. 25MC 203. 75MC	11		A18	
			195MC (10MC Swp)	193. 25MC 197. 75MC	10		A19	
			189MC (10MC Swp)	187. 25MC 191. 75MC	9		A20	
			183MC (10MC Swp)	181. 25MC 185. 75MC	8		A21	
			177MC (10MC Swp)	175. 25MC 179. 75MC	7		A22	
			85MC (10MC Swp)	83. 25MC 87. 75MC	6		A23	
			79MC (10MC Swp)	77. 25MC 81. 75MC	5		A24	
			69MC (10MC Swp)	67. 25MC 71. 75MC	4		A25	
			63MC (10MC Swp)	61. 25MC 65. 75MC	3		A26	
			57MC (10MC Swp)	55. 25MC 59. 75MC	2		A27	

OSCILLATOR ALIGNMENT FOR TUNER #69000841 (POWER TUNER)

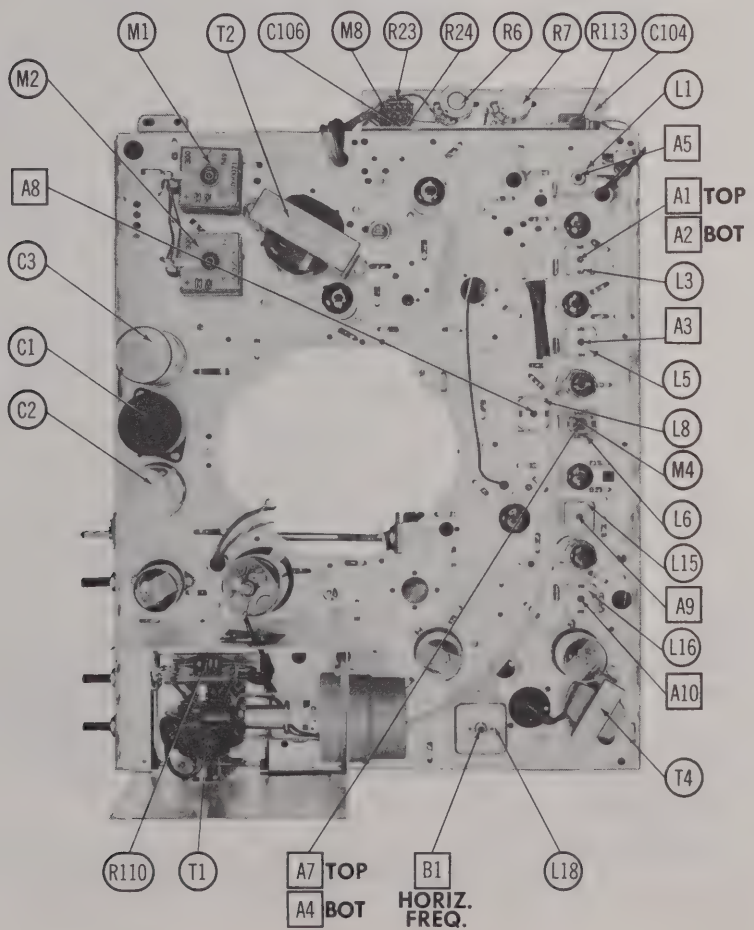
The channel oscillator adjustment screws are reached through a hole marked number 5 on the rear of the set. The hole is to the left and above the tuning motor. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel. In the power tuning model, the oscillator adjustment must be made so that it is not necessary to readjust the fine tuning when switching stations. Place the fine tuning control at the center of its range and DO NOT disturb until all the channels are adjusted. Place the channel selector to the channel needing adjustment and adjust the corresponding oscillator slug for the best picture and sound. Repeat this procedure for each channel operating in the area.

RF AND MIXER ALIGNMENT FOR ALL TUNERS

The RF and Mixer portion of this receiver have been properly aligned at the factory and are very stable. Alignment of this portion should not be required in the field.

UHF TUNER ALIGNMENT

The UHF tuner is adjusted only when the tube has been replaced. To adjust the UHF tuner, it is necessary to remove the chassis from the cabinet. Looking from the front of the chassis, the slug is located on the right side of the tuner near the upper front corner. Place the UHF channel selector on a channel operating in the area and adjust A28 for best picture and sound using an insulated alignment tool. Check the UHF dial calibration and readjust A28 if necessary.

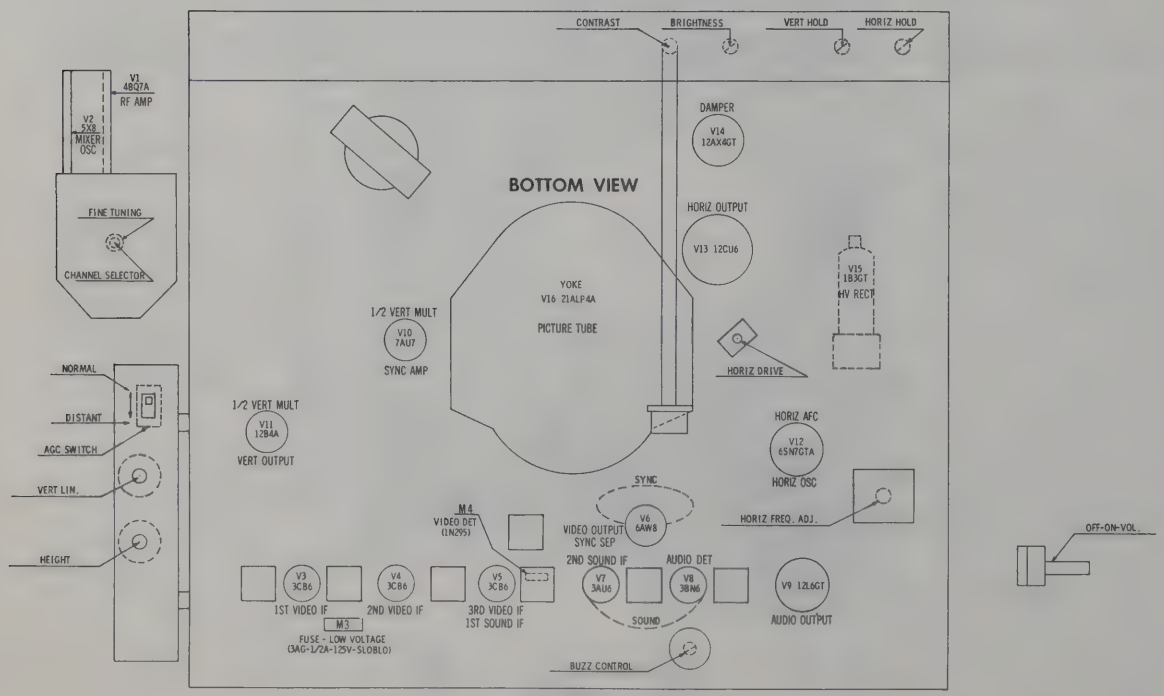


CHASSIS TOP VIEW

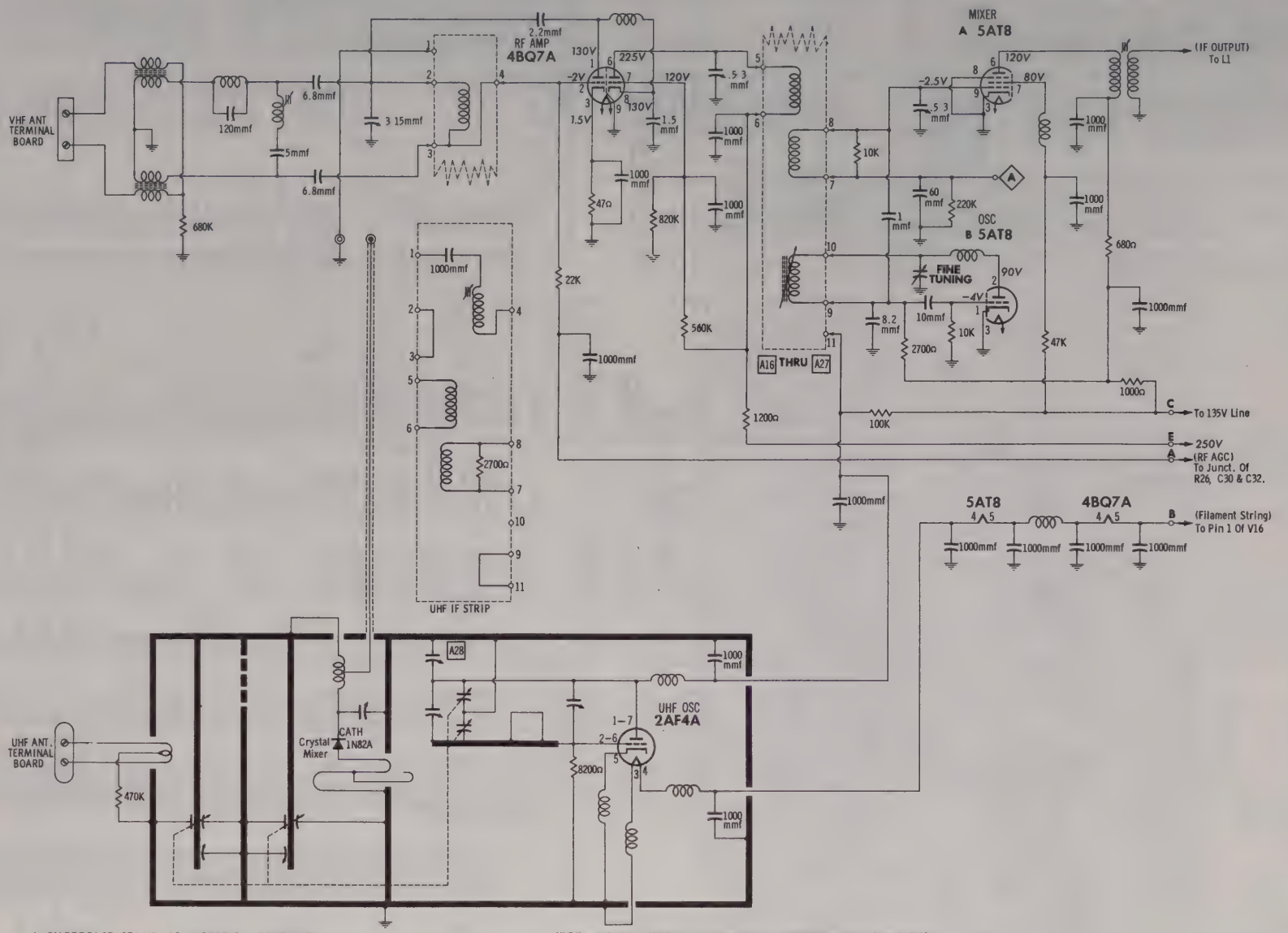
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	4BQ7A	† 48Ω	220K	INF	1Ω	2Ω	INF	1.7Meg	0Ω	0Ω
V2	5X8	0Ω	6800Ω	■7000Ω	0Ω	1Ω	0Ω	165K	■ 330Ω	■ 1300Ω
V3	3CB6	1Meg	47Ω	14Ω	13Ω	■660Ω	■ 660Ω	0Ω		
V4	3CB6	1Meg	47Ω	13Ω	12Ω	■ 330Ω	■ 330Ω	0Ω		
V5	3CB6	1000Ω	180Ω	12Ω	11Ω	† 5600Ω	■ 1000Ω	0Ω		
V6	6AW8	0Ω	1.7Meg	■ 12K	9Ω	7Ω	66Ω	1Meg	■ 1700Ω	† 5000Ω
V7	3AU6	100K	0Ω	11Ω	10Ω	■8500Ω	■8500Ω	120Ω		
V8	3BN6	● 450Ω	2.8Ω	10Ω	9Ω	■ 3900Ω	4.4Ω	† 350K		
V9	12L6GT	TP	7Ω	† 230Ω	† 48Ω	450K	TP	5Ω	17K	
V10	7AU7	■ 6000Ω	■470K	0Ω	14Ω	14Ω	●▲ 2.5Meg	220K	●180K	15Ω
V11	12B4A	● 1000Ω	2.2Meg	16Ω	15Ω	15Ω	TP	2.2Meg	NC	† 370Ω
V12	6SN7GTB	480K	† 40K	0Ω	1.5Meg	●† 50K	400K	3Ω	5Ω	
V13	12CU6	TP	17Ω	NC	† 8000Ω	1Meg	TP	19Ω	10Ω	TOP CAP ▲ 20Ω
V14	12AX4GT	NC	NC	170K	NC	† 49Ω	NC	17Ω	16Ω	
V15	1B3GT	PINS 1 - 8 HAVE INFINITE RESISTANCE								TOP CAP ▲410Ω
V16	21ALP4A	2Ω	22K	Pin 6 17K	Pin 10 ▲ 100K	Pin 11 ●■160K	Pin 12 3Ω			

† MEASURED FROM OUTPUT OF M2.
■ MEASURED FROM 135V LINE.
● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
▲ MEASURED FROM PIN 3 OF V14.
TP TIE POINT
NC NO CONNECTION



TUBE PLACEMENT CHART



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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UHF Tuner Part No. 69000831, VHF Tuner Part No. 69000821 Used With Chassis 2002.

ALTERNATE VHF-UHF TUNER SCHEMATIC

CBS-COLUMBIA MODELS 6K321, U, 6K322, U, 6K327U, 6K328U, 6KR323, 6KR324, 6KR327, 6KR328, 6T301, U, 6T303, U, 6T304, U, 6TR305, 6TR306 (Ch. 2001, 2, 3)

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	RF Amp	6BQ7A	
V2	Mixer-Osc	5AU6	
V3	1st Video IF Amp.	5CB8	
V4	2nd Video IF Amp.	5CB8	
V5	3rd Video IF Amp.	5CB8	
V6	Sound IF Amp.	5CB8	
V7	Video Output	6AW8	
V8	2nd Sound IF Amp.	3AU6	
V9	Damper	12AX6GT	
V10	Rectifier	1B3GT	
V11	Audio Det	3BN6	
V12	Audio Output	21.0GT	
V13	Vert. Mult. Sync Amp	7AU7	
V14	Vert. Mult. Vert Output	12BA6	
V15	Horiz. AFC, Horiz. Osc.	6BN7GTB	
V16	Horiz. Output	2CL6	
V17	Damper	12AX6GT	
V18	Rectifier	1B3GT	

PICTURE TUBE

ITEM No	CBS-Columbia	REPLACEMENT DATA: GENERAL ELECTRIC	SYLVANIA	NOTES
V16	21AEP4A	21AUP4A 1 21ALP4 21ALP4A 21ALP4A B 1	21AP4A 1 21AP4 21AP4A 21AP4A B 1	1 Aluminized 2 Silver Screen "88"

ELECTROLYTIC CAPACITORS

ITEM No	RATING CAP	VOLT	REPLACEMENT DATA: CBS-Columbia PART No	AEROVOX PART No	CORNELL DUBILIER PART No	PYRAMID PART No	SANGAMO PART No	SPRAGUE PART No	NOTES
C1	140	200	32003981	AFH30-35-X5	EFHT	TAH-14		TVL-1840	
C1A	40	300	2100131	AFH4-36-85	30044 30RH50		Q-222 MTD-4510	TVL-4540, 6	
B	40	50							
C	20	150							
D	150	50							
C1A	40	330	2100141	AFH3-300-60	FVP326.74			TVL-4561, 3	
B	40	330							
C	20	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING CAP	VOLT	REPLACEMENT DATA: CBS-Columbia PART No	AEROVOX PART No	CENTRALAB PART No	CORNELL DUBILIER PART No	ERIE PART No	MALLORY PART No	SPRAGUE PART No	NOTES
C4	1000			BPD-001	DD-103	K049	801-001	DC531	5HK-D1	
C5	6.1			MPD-034.7	TCS-4R7	2018	MPGA-4R7	ST-4547	STCCB-V47	
C6	5.6									
C7	8.1									
C8	8.1									
C9	5.6									
C10	5.6									
C11	800									
C12	800			BPD-0008	DD-801	G087	81-821		5GA-T8	
C13	1000			BPD-001	DD-103	K049	801-001	DC521	5HK-D1	
C14	5.5				839-3		31D-001855	ET5855A		
C15	800									
C16	1000			BPD-001	DD-102	K049	801-001	DC531	5HK-D1	
C17	1			MPD-031	TCS-1	T203	MPGA-010		STCCB-V1	
C18	1			TCS-1R2.2	TCS-1R2	T105	MPGA-1R2		STCCB-V12	
C19	39									
C20	5.3				839-3		31D-01.055	CT5855A		
C21	3			MPD-032	TCC-3R3	T205	MPGA-3R3		STCCB-V33	
C22	1			MPD-031	TCC-1	T203	MPGA-010		STCCB-V1	
C23	33				TCL-33					
C24	5			BPD-001	DD-103	K049	801-001	DC531	5HK-D1	
C25	1000									
C26	800									
C27	1000			BPD-001	DD-103	K049	801-001	DC531	5HK-D1	
C28	1000									
C29	1800		32004840	BPD-0018	DD-183	K071	801-0018	DC5315	5HK-D18	
C30	1500		32004840	BPD-0015	DD-152	K071	801-0015	DC5215	5HK-D15	
C31	.25	300	32013190	P348N-1		CUBSP25		PT4025	25M-P25	
C32	1	300	32013200	P348N-1	DF-104	CUBSP1		PT401	2TM-P1	
C33	3900		32004500	BPD-009	DD-392	K080	81-005	DC535	5HK-D39	
C34	1800		32004840	BPD-0018	DD-183	K071	801-0018	DC5315	5HK-D18	
C35	190		32003190	TCS-191	TP54	GP2K-191	UC-5319		5GA-T19	
C36	1500		32004540	BPD-0015	DD-152	K071	801-0015	DC5215	5HK-D15	
C37	1500		32004660	BPD-0015	DD-152	K071	801-0015	DC5215	5HK-D15	
C38	1000		32004700	BPD-001	DD-102	K049	801-001	DC531	5HK-D1	
C39	5000		32004500	BPD-009	DD-502	K080	81-005	DC535	5HK-D5	
C40	1500		32004660	BPD-0015	DD-152	K071	801-0015	DC5215	5HK-D15	
C41	1500		32004700	BPD-0015	DD-152	K071	801-0015	DC5215	5HK-D15	
C42	22	600	32013200	P02-02	DF-203	CUBS8S22	817-02	PT4122	6TM-S22	
C43	1	300	32013280	P348N-1	DF-104	CUB2P1		PT401	2TM-P1	
C44	1	300	32013280	P348N-1	DF-104	CUB2P1		PT401	2TM-P1	
C45	.047	300	32007740	BPD-08	DF-503	CUBS8347		PT4347	2TM-S47	
C46	3900		32004500	BPD-009	DD-392	K080	81-005	DC535	5HK-D39	
C48	10000		32065000	BPD-01	DD-103	K082	81-01	DC51	5HK-S1	
C49	47		32006940	MPD-4747	DD-470	J233	831-470	ST-5447	STCC-Q47	
C50	39		32003570	2139	DH-390	TP28	GP1K-390	UC-5439	5GA-Q39	
C51	1	400	2201780	P348N-1	DF-104	CUB4P1		PT4101	4TM-P1	
C52	.047	600	32023240	BPD-05	DF-503	CUBS647		PT6347	6TM-S47	
C53	.022	600	32013200	BPD-02	DF-203	CUBS8S22	817-02	PT6122	6TM-S22	
C54	1	300	32013200	P348N-1	DF-104	CUB2P1		PT401	2TM-P1	
C55	10000		32065030	BPD-01	DD-103	K082	81-01	DC51	5HK-S1	
C56	10000		32065020	BPD-01	DD-103	K082	81-01	DC51	5HK-S1	
C57	10000		32065030	BPD-01	DD-103	K082	81-01	DC51	5HK-S1	
C58	10000		32065020	BPD-01	DD-103	K082	81-01	DC51	5HK-S1	
C59	5000		32065400	BPD-005	DD-502	K080	81-005	DC535	5HK-D5	
C60	1000		32001740	SD000	D6-102	TP52	GP2L-102	UC-521	5GA-D1	
C61	100		32001720	SD100	D6-101	TP34	GP1K-100	UC-5211	5GA-D10	Note 1
C62	.0047	600	32011620	BPD-0047	D6-472	CUBD47	GP2-333-472	PT6247	6TM-D47	
C63	.01	600	32017660	BPD-01	D6-103	CUBD81	GP2-333-103	PT611	6TM-D1	Note 2
C64	1000		32065080	BPD-01	DD-103	K082	81-01	DC51	5HK-S1	
C65	.01	600	32011660	BPD-01	D6-103	CUBD81	GP2-333-103	PT611	6TM-D1	
C66	.033		2300156	BPD-03	D6-333	TP54	GP2-333-302	UC-5233	5GA-T33	
C67	.022	200	32011200	BPD-02	DF-203	CUBS822	817-02	PT4122	4TM-S22	
C68	2000		32003561	SD200	D6-202	TP54	GP2-333-202	UC-523	5GA-D2	
C69	2000		32009061	SD200	D6-202	TP54	GP2-333-502	UC-525	5GA-D5	
C70	5000		32000601	SD500	D6-502	TP54	GP2-333-502	UC-525	5GA-D5	
C71	1200		32003251	1484-0012		UBD12	81-121		MB-D12	
C72	.047	200	32007740	BPD-05	DF-503	CUBS2347		PT4147	2TM-S47	
C73	.033	600	32013220							
C74	1000	600	32017660	D4-01	D6-103	CUBS81	GP2-333-103	PT611	6TM-S1	Note 3
C75	.01	400	32002280	P348N-1	DF-104	CUB4P1		PT4101	4TM-P1	
C76	1000		32065070	BD-001	DD-102	G089	811-D3	UC-531	5GA-D1	
C77	1500		32064640	BPD-0015	DD-152	K071	801-0015	DC5215	5HK-D15	

CONTROLS

ITEM No	RATING RESIST	ANCE	WATTS	REPLACEMENT DATA: CBS-Columbia PART No	CENTRALAB PART No	CLAROSTAT PART No	IRC PART No	MALLORY PART No	INSTALLATION NOTES
R1A	350K		1	33001571	AB-50		Q13-153		Volume - Note 1
B	Shaft			Not Req.	AK-3		Not Req.		Attach to R1A
C	Switch			Not Req.	ES-1		T6-1		Attach to R1A
R3	100K		1/2	33001564				PTA15L	Horiz. Hold
R4	100K		1/2	33001561					Vert. Hold
R4	250K		1/2	33001563					Brightness
R5	150K		1/2	33001565					Contrast Tapped @ 10K
R6A	2500		1	33001569	AB-7	A47-2500-S	Q11-112	UB	Vert. Linearity
B	Shaft			Not Req.	AK-1	FKS-1/3	Not Req.	Not Req.	Attach to R6A
R7A	5Meg		1	33001567	AB-67	A47-5Meg S	Q11-167	YA5L	Height
B	Shaft			Not Req.	AK-1	FKS-1 2	Not Req.	Not Req.	Attach h. R7A
R9	4000		2	33001301		39-601			AM Rejection (Wire-wound)
R9	25K		1	33001567					Fine Tuning - Note 2

Note 1: Chassis 2003 will use an alternate control part #33001568 in this application.
Note 2: Used in chassis 2003 only.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No	RATING OHMS	WATT	REPLACEMENT DATA: CBS-Columbia PART No	NOTES
R10	680K		BTS-680K	
R11	33K		BTS-33K	
R12	5600		BTS-5600	
R13	470K		BTS-470K	
R14	820K		BTS-820K	
R15	5800		BTS-5800	
R16	15K		BTS-15K	
R17	180K		BTS-180K	
R18	5800		BTS-5800	
R19	5800		BTS-5800	
R20	6800		BTS-6800	
R21	10000		BTS-1000	
R23	6.8Meg	5%	BTS-6.8Meg	
R23	1.5Meg		30155230	BTS-1.5Meg
R24	5.6Meg		30155320	BTS-5.6Meg
R25	1.5Meg		30155230	BTS-1.5Meg
R26	1Meg		30105220	BTS-1Meg
R27	5.6Meg			BTS-560K
R28	1.6Meg	5%	30185150	BTS-1.6Meg
R29	330K	5%	30334130	BTS-330K
R30	1Meg		30105220	BTS-1Meg
R31	10000		30102330	BTS-1000
R32	27K		30273230	
R33	330K		30333130	BTS-330
R34	330Ω		30331130	BTS-330
R35	47Ω		30470134	BTS-47
R36	10000		30102330	BTS-1000
R37	330Ω		30331130	BTS-330
R38	47Ω		30470230	BTS-47
R39	33K		30333230	BTS-33K
R40	10000		30102330	BTS-1000
R41	180Ω		30181230	BTS-180
R42	5800Ω	1	30562240	BTA-5800
R43	1000Ω		30102330	BTS-1000
R44	5800Ω		30562330	BTS-5800
R45	4700Ω	5%	30472130	BTS-4700 5%
R46	100K	5%	30104230	BTS-100K 5%
R47	330Ω		30331230	BTS-330
R48	6800Ω		30682230	BTS-6800
R49	15K		30153230	BTS-15K
R50	7500Ω	5	33009533	PW7-7500
R51	4700Ω		30472330	BTS-4700
R52	33Ω		30330230	BTS-33
R53	33Ω		30330230	BTS-33
R54	2200Ω		30222330	BTS-2200
R55	180K		30184230	BTS-180K
R56	33K		30333230	BTS-33K
R57	1000Ω		30102330	BTS-1000
R58	100K		30104330	BTS-100K
R59	10K	2	30103250	BTB-10K
R60	18K		30183230	BTS-18K
R61	130Ω		30131130	BTS-120
R62	1000Ω		30102330	BTS-1000
R63	1000Ω		30102330	BTS-1000
R64	2900Ω	1	30292340	BTA-2900
R65	22K		30223230	BTS-22K
R66	1.1Meg	5%	30185150	BTS-1.1Meg
R67	5.6Meg		30562330	BTS-5.6Meg
R68	1000Ω		30102330	BTS-1000
R69	10Meg		30103530	BTS-10Meg
R70	270K		30274230	BTS-270K
R71	12K		30123230	BTS-12K
R72	470K		30474230	BTS-470K
R73	470Ω	1	30474230	BTA-470
R74	1000Ω		30102330	BTS-1000
R75	22K		30223230	BTS-22K
R76	2200Ω		30222330	BTS-2200
R77	8200Ω		30822330	BTS-8200
R78	100K		30104230	BTS-100K
R79	220K		30224230	BTS-220K
R80	1Meg		30105230	BTS-1Meg
R81	150K			BTS-150K
R82	470K		30474230	BTS-470K
R83	15K		30153230	BTS-15K
R84	2.2Meg		30225230	BTS-2.2Meg
R85	470Ω	1	30474230	BTA-470
R86	1000Ω		30102330	BTS-1000
R87	560Ω			
R88	5800			
R89	330K		30334230	
R90	330K		30334230	
R91	820K		30824230	
R92	82K		30823230	
R93	330K		30334230	
R94	2000Ω		30392230	
R95	820Ω		30822330	BTS-8200
R96	47K	1	30474240	BTA-47K
R97	47K	1	30473340	BTS-47K
R98	68K		30683230	BTS-68K
R99	180K			
R100	220Ω		30222230	BTS-8200
R101	47K	1	30474240	BTA-47K
R102	100Ω		30031330	
R103	100Ω		30031330	
R104	15K	2	30153250	
R105	18K	2	30183250	
R106	100Ω		30031330	
R107	47K	1	30473340	BTA-47K
R108	68K		30683230	BTS-68K

RESISTORS (cont)

ITEM No	RATING OHMS	WATT	REPLACEMENT DATA: CBS-Columbia PART No.	IRC PART No.	NOTES
R110	68K		30683230	BTS-68K	
R111	47000	1	30473340		
R111A	33Ω	25	31000486		Note 5
B	10Ω				
R112	7.5Ω	6	33000472	PW1u-7.5	
R113	220K	1	30224341	BTA-220K	

Note 1: Some versions use a 68K 1/2W 5% resistor in this application. (part #30684130)
Note 2: Not used in some versions.
Note 3: Some versions use a 330K resistor in this application. (part #30333230)
Note 4: Some versions use a 120K resistor in this application. (part #30134330)
Note 5: Items R111A and R111B are combined in one unit.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA: CBS-Columbia PART No	Halldorson PART No	Merit PART No	RCA TYPE No	Ram PART No	Stancor PART No	Thordarson PART No	Triad PART No
T1	Horiz. Output Trans.	1200190	TF614P4 1	TV10-10F#1	2297T1#1	X0944F 1	A-8255#1	FLY-10F#1	D-50F#1
T2	Vert. Output Trans.	1000568	21000 2	V30T	A-2823	V30T	A-8144	FLY-10B3	D-10B3
T3A	Yoke(90°)Def.(21MB)	1001561	DF607 3	MD3-02 4	255D1 4	YE07F10, 43	DY-16A 4	Y-16 4	Y-41-1 4
	Vert(40MB)								

① Drill new mounting hole(s).
② Use 8 to 1 horiz. trim.
③ Includes capacitor C93. Resistors R87 and R88.
④ Use original horiz. yoke damping network.
‡ This part may be superceded by Parts Manufacturer's introduction of special unit for this application.

‡HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
9	9	9	9	5	9	9	9
6	7	7	7	7	4	7	7
5	N.C. See Note ⑤	N.C. See Note ⑤	N.C. See Note ⑤	N.C. See Note ⑤	N.C. See Note ⑤	N.C. See Note ⑤	N.C. See Note ⑤
4	3	3	3	3	2	3	3
3	1	1	1	2	1	1	1
Special Notes	① ③	① ③	① ③	⑤	⑤	⑤	⑤

① To reduce yoke "ringing", connect approximately 1000Ω 1W in series with capacitor C93.
② To increase width, add capacity (approx. 50-100MMF ③ 1KV MINIMUM) across horiz. yoke terms #3 and #1.

TRANSFORMER (AUDIO OUTPUT)

ITEM No	IMPEDANCE PRI	SEC	REPLACEMENT DATA: CBS-Columbia PART No	Halldorson PART No	Merit PART No	Stancor PART No	Thordarson PART No	Triad PART No	NOTES
T4	2K	3-4Ω	10000741	Z111	A-2928	A-3876	24S50	S-1X	

SPEAKER

ITEM No	RATINGS SIZE	FIELD	V. C. IMP	REPLACEMENT DATA: CBS-Columbia PART No	QUAM PART No	RCA TYPE No	NOTES
SP1	5"	PM	3-4Ω	7300-051 ①	5A0T	20502	① Used in models 6T303, 6T304, 6T303U, 6T304U, 6TR305, 6TR306
	4"			7300-041 ②			② Used in models 6T301, 6T301U.
	8"			7300-081 ③			③ Used in models 6K321, 6K322, 6K321U, 6K322U, 6K323U, 6K323U, 6KR323, 6KR324, 6KR327, 6KR328.

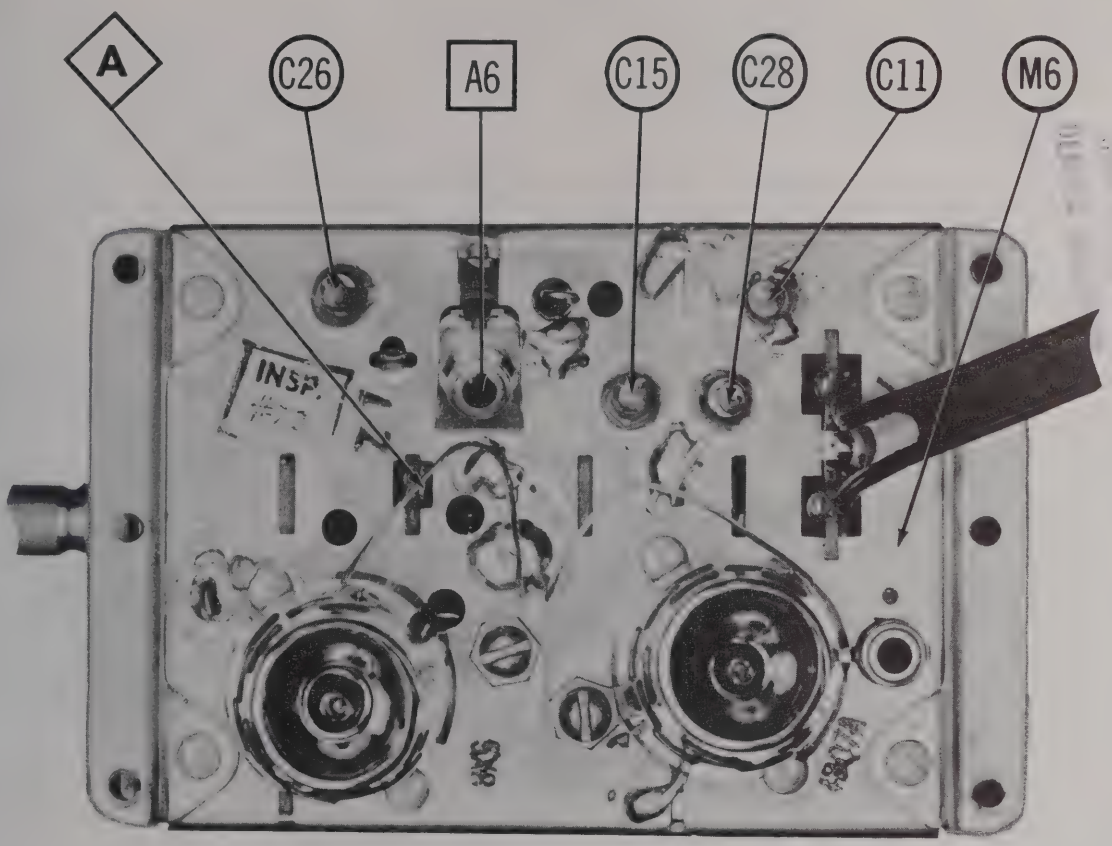
COILS (RF-IF)

ITEM No	USE	DC RES PRI.	DC RES SEC.	REPLACEMENT DATA: CBS-Columbia PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	1st Video IF	9Ω	.1Ω	32001171	17-5001	TV-125	6231	
L2	Fil. Choke	9Ω	.1Ω	32000851	19-1001		4604	1.5 Microhenries
L3	2nd Video IF	.1Ω	.1Ω	32001111				
L4	Fil. Choke	9Ω	.1Ω	15000854	19-1001		4604	1.5 Microhenries
L5	3rd Video IF	.1Ω	.1Ω	32001031				
L6A	4th Video IF	.1Ω	.1Ω	32001201				Includes M4, Cage, and Series Peaking Coil ①
B	2nd Sound IF	1.1Ω						
L7	Series Peaking Coil	1.8Ω						7. 7 Microhenries, Note 1 Includes Cage.
L8	1st Sound IF	1.3Ω		15000761				
L9	Series Peaking Coil	7Ω		16000041	19-3125		6153	120 Microhenries
L10	Shunt Peaking Coil	17Ω		16000045	19-3500		6174	550 Microhenries
L11	Series Peaking Coil	1.3Ω		16001481	19-1005		4612	0.7 Microhenries, Note 2
L12	4.5MC Trap	3.1Ω		16001401	20-1004	TV-151	1469	
L13	Series Peaking Coil	10Ω		16001364	19-3250	TV-185	6181	236 Microhenries
L14	Shunt Peaking Coil	17Ω		16000045	19-3500		6174	550 Microhenries
L15	3rd Sound IF	3.1Ω	2.8Ω	32001151				
L16	Quadrature Coil	4.4Ω		15000721			1481	
L17	RF Choke	1.8Ω		15000702	19-1001		4604	1.9 Microhenries, IRC part #CLA

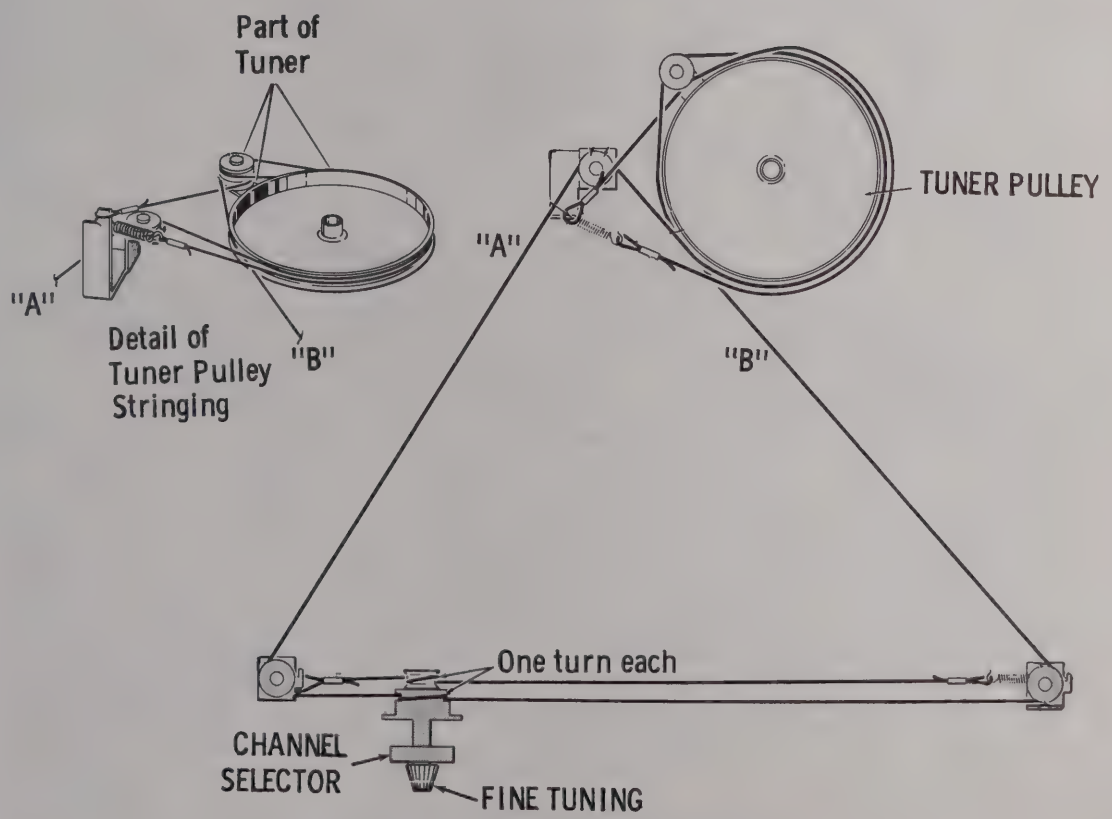
Note 1. Not used in some versions.
Note 2. Not used in chassis 2001 and 2003.

TRANSFORMER (HORIZ. OSC.)

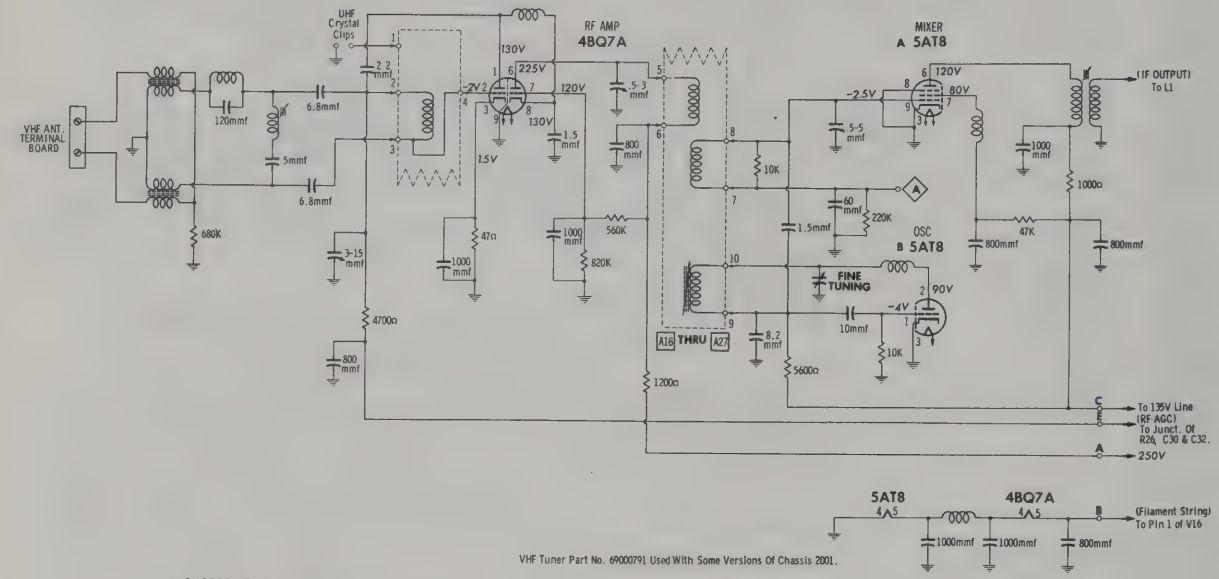
ITEM No	USE	DC RES PRI	DC RES SEC	REPLACEMENT DATA: CBS-Columbia PART No	MEISSNER PART No	MERIT PART No	RCA TYPE No	Ram PART No	Thordarson PART No	NOTES
L18	22Ω	38Ω		15000741	20-1402	TV-162	6183	205R1	H-100	H5-3 Waveform winding 450



RF TUNER-TOP VIEW



UHF DRIVE CORD STRINGING



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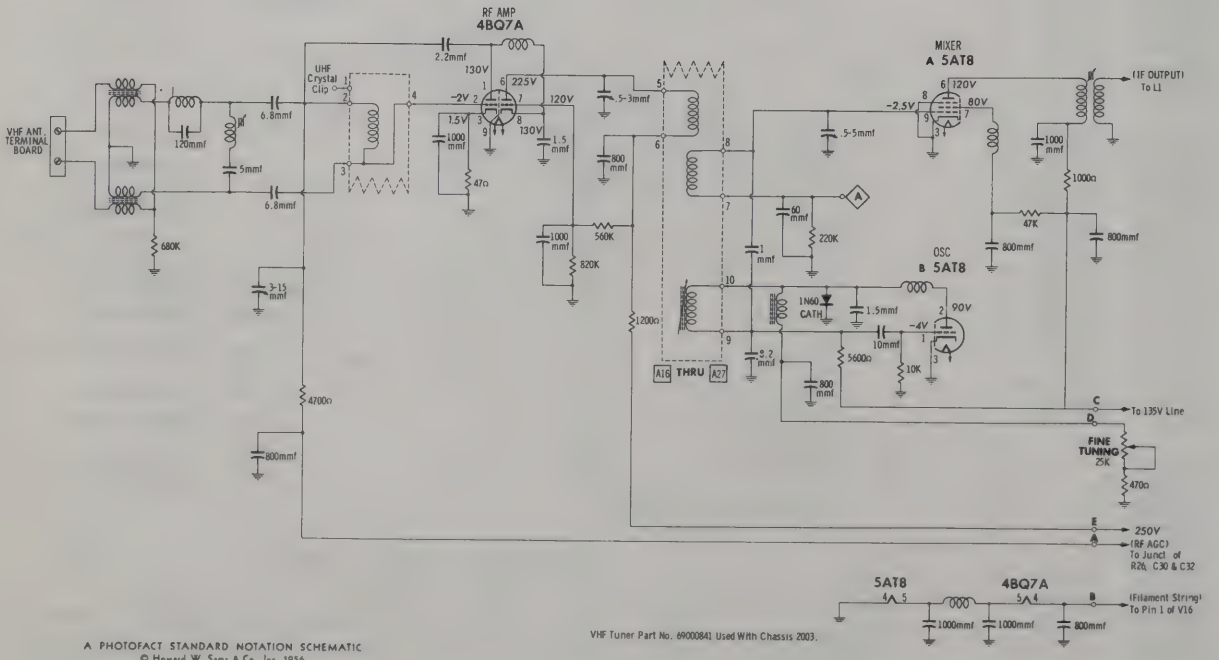
ALTERNATE VHF TUNER SCHEMATIC



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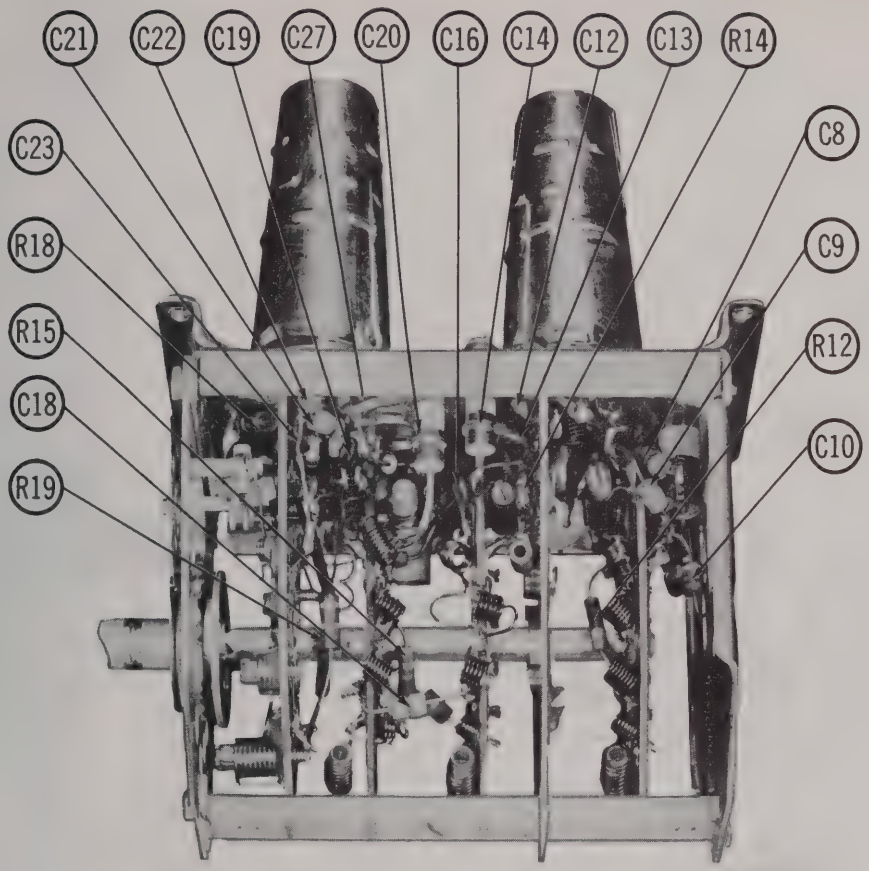
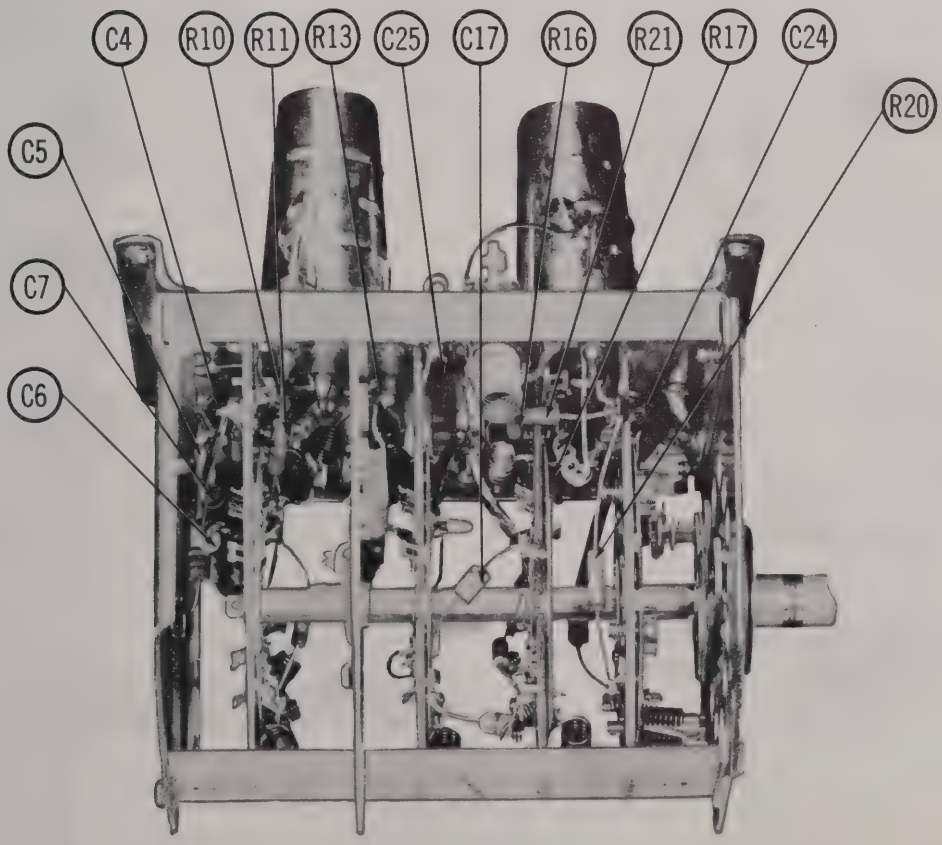
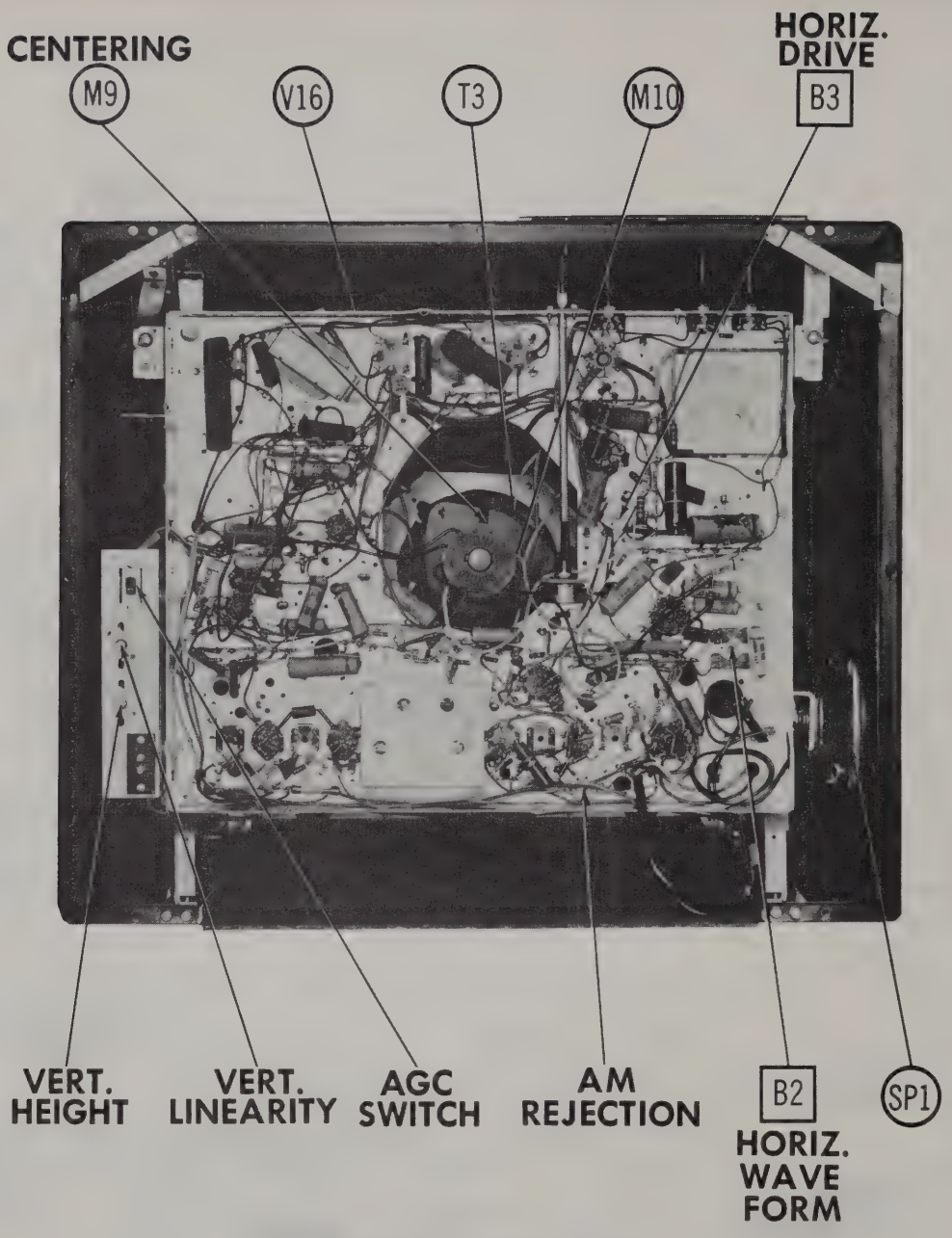


RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. Turn the set on and tune in a TV station, preferably with a test pattern. Adjust the controls for a normal picture. Set the horizontal hold control to the center of its range.

2. Short terminal "C" and "D" of the horizontal oscillator coil (L18) and adjust the horizontal frequency slug (B1) until the picture is in sync. Set the slug at the center of its range in which the picture remains in sync.

3. Remove the short and connect the vertical amplifier of the oscilloscope thru a 10MMF capacitor to terminal "C" of L18. Low side to chassis.

4. Adjust the horizontal waveform slug (B2) until a waveform similar to Fig. 3 is obtained with equal peaks.

5. Adjust B1 until the picture just begins to fall out of sync with the horizontal hold control fully clockwise.

6. Using an insulated screwdriver, turn the horizontal drive control (B3) counter clockwise until a bright vertical line appears in the picture near the center of the screen, then turn B3 clockwise until the line just disappears.

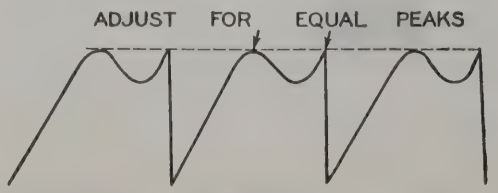


FIG. 3

IMPORTANT FILING NOTICE

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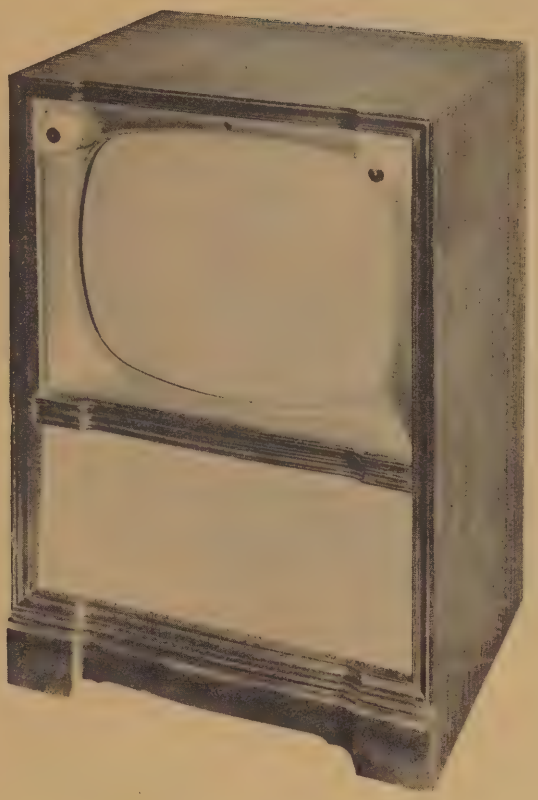
Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



CORONADO MODEL TV2-9338A

TRADE NAME	Coronado Models TV2-9338A, TV2-9340A (VHF Receivers), TV2-9339A, TV2-9341A (UHF-VHF Receivers)
SUPPLIER	Gambles-Skogmo, Inc., 15 N. 8th. St., Minneapolis, Minn.
TYPE SET	Television Receiver
TUBES	Twenty
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 1.7 Amp. @ 117 Volts AC
TUNING RANGE-	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

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CORONADO MODELS TV2-9338A, TV2-9339A, TV2-9340A, TV2-9341A

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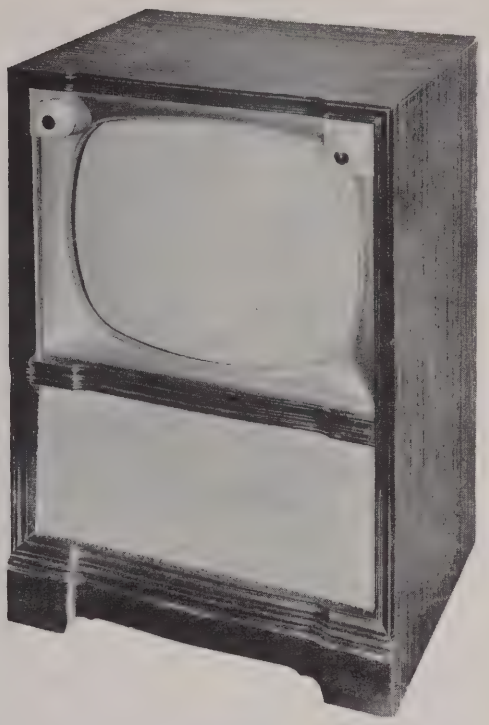

MODEL
TV2-9338A

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 7 push-on type control knobs from front panel.

2. Remove 5 wood screws and 1 metal screw. Remove rear cover.

3. Disconnect speaker leads.

4. Remove 2 wood screws holding antenna terminal bracket.

5. Remove 6 chassis mounting board bolts holding chassis mounting board to cabinet, and 2 wood screws from 2 brackets at top of cabinet.

6. Slide chassis with mounting board from cabinet.

7. Remove 4 speed nuts. Remove speaker.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removing the channel selector and fine tuning knobs.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 7 push-on type control knobs from front panel of cabinet. Remove 2 metal screws from each cover escutcheon panel. Remove panels and safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Set the horizontal hold control at the center of its range and adjust the horizontal frequency slug (L27) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, it is necessary to remove the rear cover and supply power to the chassis. Adjust the buzz control (R10) for maximum sound and MINIMUM buzz.

FUSES

One fuse is used for LV power supply protection. (For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

CORONADO MODELS TV2-9338A, TV2-9339A, TV2-9340A, TV2-9341A

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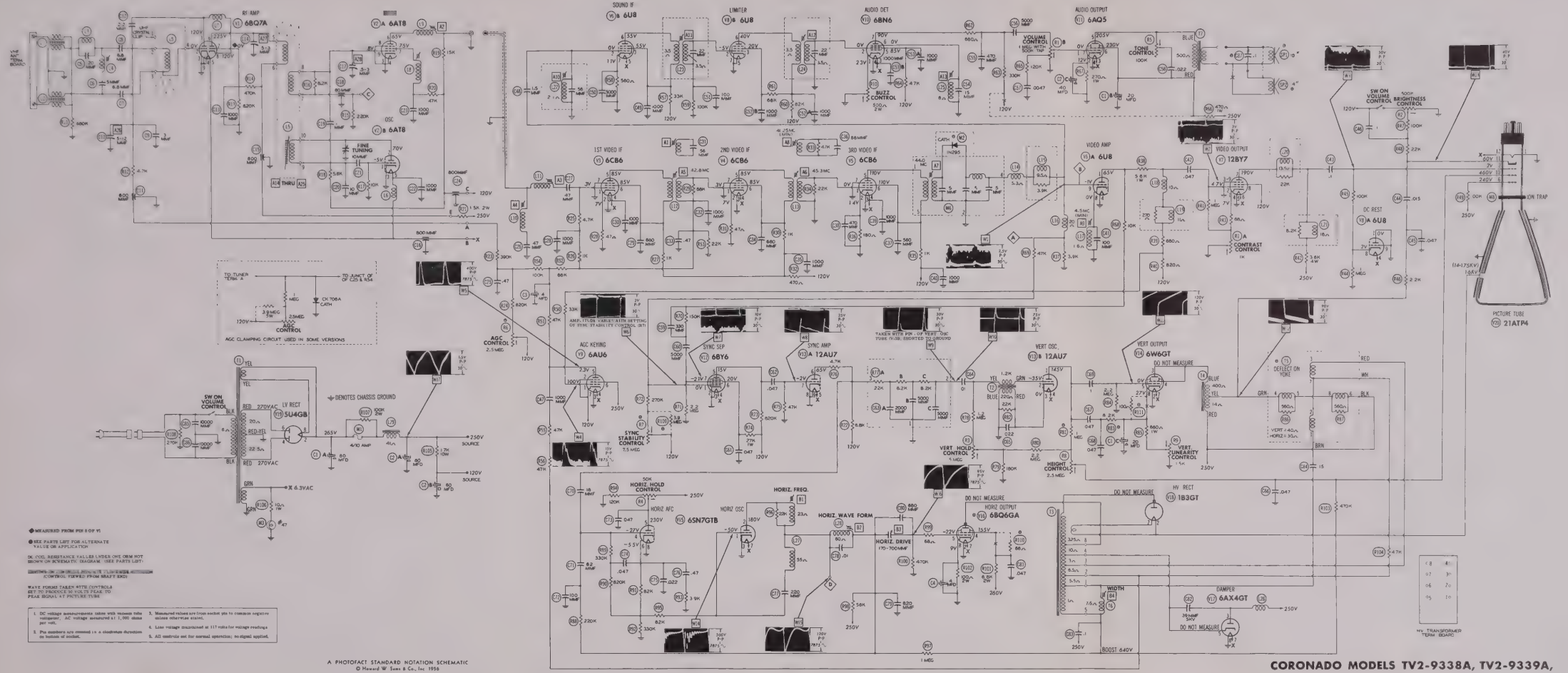
RF AMP V1 6BQ7A
V2-A 6AT8
V2-B 6AT8 OSC
FINE TUNING
A1 THRU A25
SOUND IF V6-B 6U8
LIMITER V8-B 6U8
AUDIO DET V10 6BN6
AUDIO OUTPUT V11 6AQ5
VOLUME CONTROL
TONE CONTROL
BUZZ CONTROL
1ST VIDEO IF V3 6CB6
2ND VIDEO IF V4 6CB6
3RD VIDEO IF V5 6CB6
VIDEO AMP V15-A 6U8
VIDEO OUTPUT V7 12BY7
CONTRAST CONTROL
SW ON VOLUME CONTROL
BRIGHTNESS CONTROL
DC REST V8-A 6U8
PICTURE TUBE V20 21ATP4
ION TRAP
DEFLECTION YOKE
TO TUNER TERM A
TO JUNCT OF C25 & R54
AGC CLAMPING CIRCUIT USED IN SOME VERSIONS
AGC CONTROL 2.5 MEG
AGC KEYING V9 6AU6
SYNC SEP V12 6BY6
SYNC AMP V13-A 12AU7
SYNC STABILITY CONTROL 7.5 MEG
VERT OSC V12-B 12AU7
VERT OUTPUT V14 6W6GT
VERT HOLD CONTROL 1 MEG
HEIGHT CONTROL 2.5 MEG
VERT LINEARITY CONTROL 1.5K
SW ON VOLUME CONTROL
LV RECT V19 5U4GB
DENOTES CHASSIS GROUND
X 6.3VAC
250V SOURCE
120V SOURCE
HORIZ. HOLD CONTROL 50K
HORIZ AFC
HORIZ OSC V15 6SN7GTB
HORIZ. FREQ.
HORIZ. WAVE FORM
HORIZ. DRIVE 170-700MMF
HORIZ OUTPUT V16 6BQ6GA
DO NOT MEASURE
HV RECT V18 1B3GT
WIDTH
DAMPER V17 6AX4GT
BOOST 640V
HV TRANSFORMER TERM BOARD
CONTROL VIEWED FROM SHAFT END
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 30 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction as bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; no signal applied.

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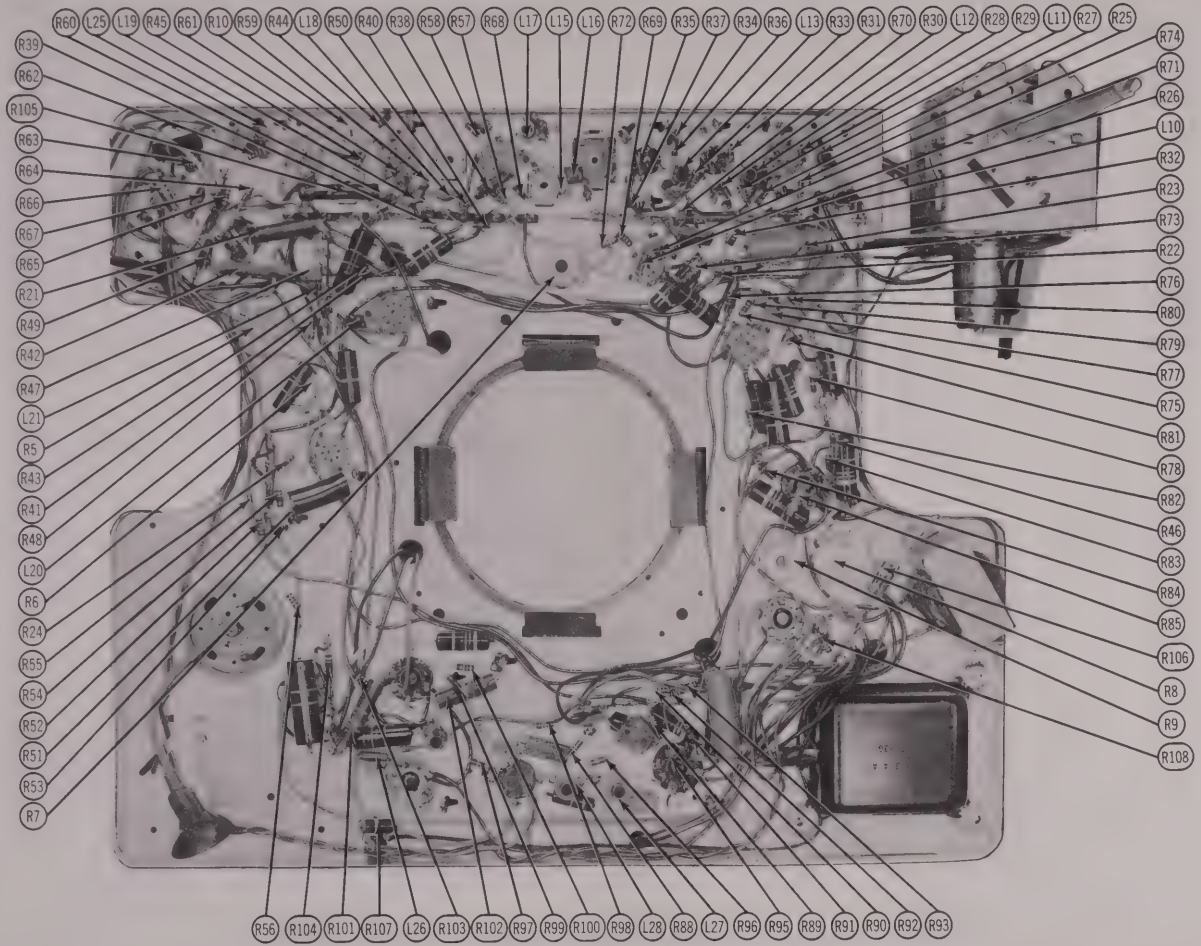
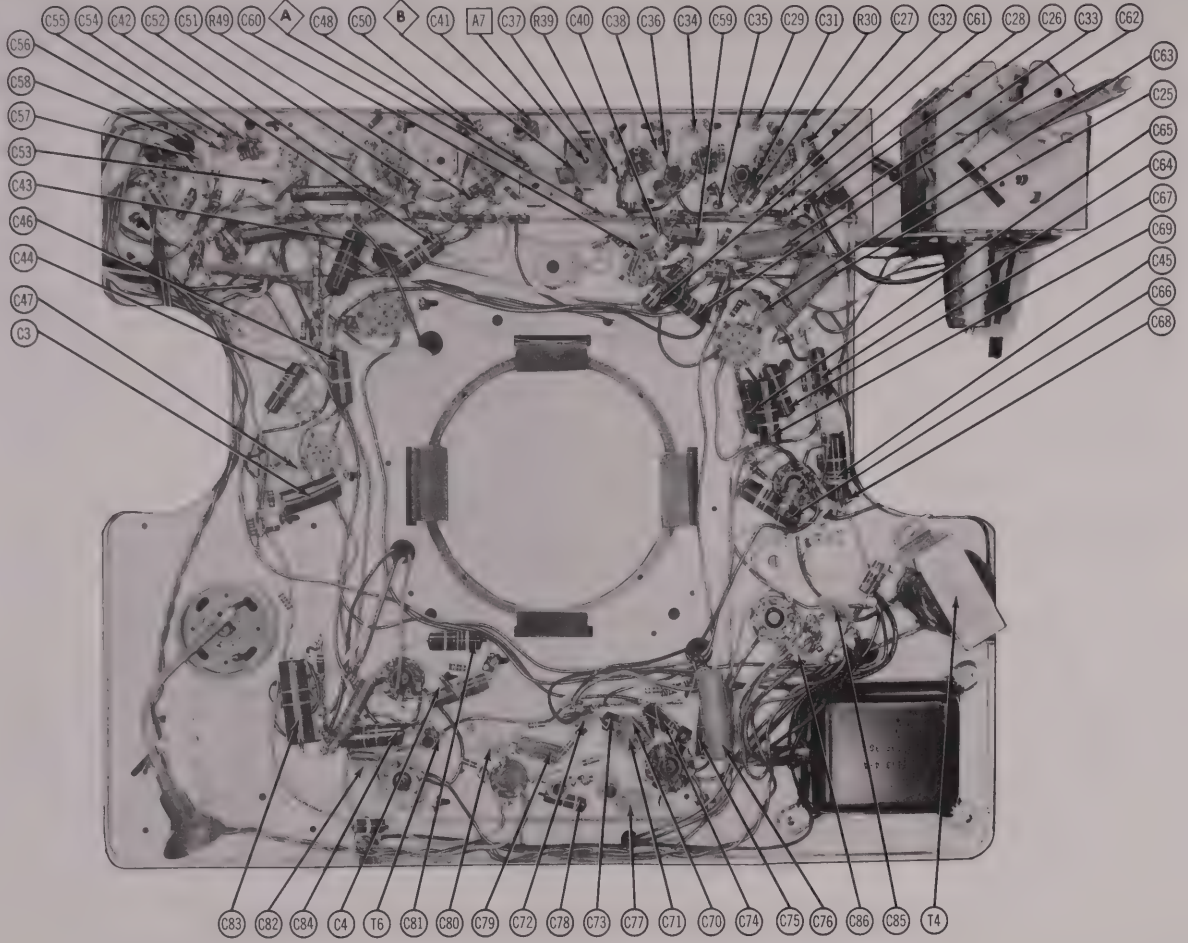
CORONADO MODELS TV2-9338A, TV2-9339A, TV2-9340A, TV2-9341A

CORONADO MODELS TV2-9338A, TV2-9339A, TV2-9340A, TV2-9341A

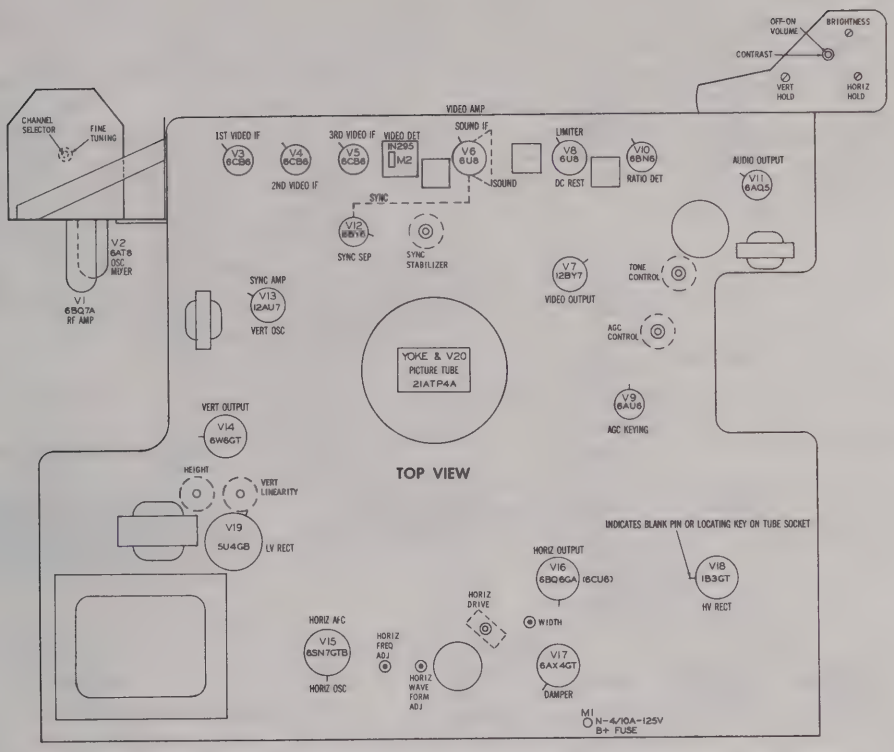


CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V19, Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V6, V7, V8, V20
Has pic, no sound - V6, V9, V10, V11
Overloaded picture - V8

SYNC FAILURE
No vert. sync - V13
No horiz. sync - V13, V15
No vert. or horiz. sync - V12, V13

SWEEP FAILURE
No raster, has sound - V15, V16, V17, V18, V20
No vertical deflection - V13, V14
Poor vert. linearity or foldover - V13, V14
Poor horiz. linearity or foldover - V15, V16, V17
Narrow picture - V15, V16, V17, V18, V19
Vert. off freq. - V13
Horiz. off freq. - V13, V15

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage leads should be securely taped away from the chassis.

VIDEO IF ALIGNMENT

Connect the negative lead of a 1.5 volt battery to the ungrounded side of C32. Connect the positive lead to chassis.
Use only enough generator output to provide usable indication on the scope or VTVM.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over converter tube (V2).	44MC (10MC Swp.)	41.25MC 45.75MC 47.25MC	Any unused channel	Vert. Amp. thru detector (Fig. 1) to pin 5 of 6CB6 (V3). Low side to chassis.	A1, A2, A3, A4	Adjust A1 to place 47.25MC marker in trap notch as in Fig. 2. Adjust A2, A3, and A4 for response similar to Fig. 2. A2 and A3 affect the flat portion of the curve. A4 positions the 41.25MC marker. Make sure 45.75MC marker is on peak of curve as shown or 44.5MC marker will be incorrect on overall response curve.
2.	"	"	Not used	42.8MC (Unmod.)	"	Use VTVM. DC probe to point (A). Low side to chassis.	A5	Increase bias to 4.5 volts. Attenuate generator output to maintain 1 volt at VTVM. Adjust for maximum deflection.
3.	"	"	Not used	45.3MC (Unmod.)	"	"	A6	"
4.	"	"	"	44MC (Unmod.)	"	"	A7	"
5.	"	"	"	41.25MC (Unmod.)	"	"	A8	Adjust for MINIMUM deflection.
6.	"	"	44MC (10MC Swp.)	41.25MC 42.25MC 42.5MC 43.9MC 44.5MC 45.3MC 45.75MC 47.25MC	"	Vert. Amp. thru 10KΩ to point (A). Low side to chassis.		Check for response curve similar to Fig. 3. SLIGHTLY retouch A5 thru A8 to obtain desired response. If A1 thru A4 requires retouching, step 1 should be repeated.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	10KΩ	High side thru 10KΩ to point (B). Low side to chassis.	4.5MC (Unmod.)	Any unused channel	DC probe to pin 2 (grid) of picture tube.	A9	Adjust for MINIMUM deflection.

ALTERNATE 4.5MC TRAP ALIGNMENT

Remove bias supply.
Tune in a TV station and adjust A9 for MINIMUM 4.5MC beat interference in the picture.

SOUND IF ALIGNMENT

Turn the set on and tune in a TV station. Reduce the signal input by use of an attenuator or similar device until hiss and background noise is noticed.
Adjust A10, A11, A12, A13 and R10 for maximum undistorted sound and MINIMUM buzz.
If hiss disappears during alignment, reduce signal until hiss reappears.

VHF OSCILLATOR ALIGNMENT

Connect the negative lead of a 4.5 volt battery to the unground side of C32. Connect the positive lead to chassis.
The channel oscillator adjustment screws are reached through a hole below and slightly to the right of the channel switch shaft. The correct adjustment screw is accessible though this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω Carbon Resistors	Across VHF antenna leads with 120Ω in each lead.	213MC (10MC Swp.)	211.25MC 215.75MC	13	Vert. Amp. thru 10KΩ to point (A). Low side to chassis.	A14	Adjust to place sound marker in trap notch as in Fig. 4. Video marker should be at 50%.
			207MC (10MC Swp.)	205.25MC 209.75MC	12		A15	
			201MC (10MC Swp.)	199.25MC 203.75MC	11		A16	
			195MC (10MC Swp.)	193.25MC 197.75MC	10		A17	
			189MC (10MC Swp.)	187.25MC 191.75MC	9		A18	
			183MC (10MC Swp.)	181.25MC 185.75MC	8		A19	
			177MC (10MC Swp.)	175.25MC 179.75MC	7		A20	
			85MC (10MC Swp.)	83.25MC 87.75MC	6		A21	
			79MC (10MC Swp.)	77.25MC 81.75MC	5		A22	
			69MC (10MC Swp.)	67.25MC 71.75MC	4		A23	
			63MC (10MC Swp.)	61.25MC 65.75MC	3		A24	
			57MC (10MC Swp.)	55.25MC 59.75MC	2		A25	

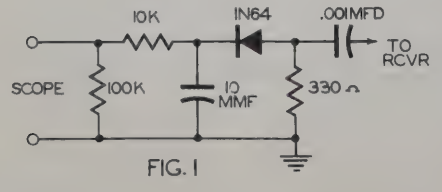


FIG. 1

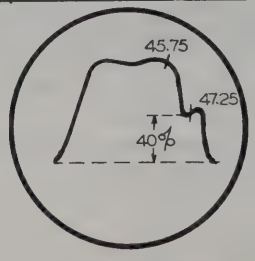


FIG. 2

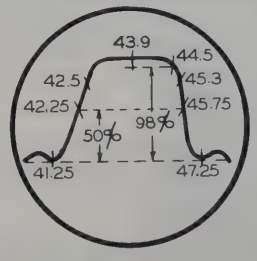


FIG. 3

ALIGNMENT INSTRUCTIONS (cont)

VHF RF AND MIXER ALIGNMENT

Connect the negative lead of a 3 volt bias supply to the ungrounded side of C25. Connect the positive lead to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	207MC (10MC Swp.)	205. 25MC 209. 75MC	12	Vert. amp. thru 10KΩ to point Ⓒ. Low side to chassis.	A26, A27, A28	Adjust for response curve similar to Fig. 5 with markers above 90%.
10.	"	"	213MC (10MC Swp.)	211. 25MC 215. 75MC	13	"		If markers fall below 70% on any channel, make compromise adjustment of A26, A27, and A28 with channel switch set to that channel. Then recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp.)	199. 25MC 203. 75MC	11			
			195MC (10MC Swp.)	193. 25MC 197. 75MC	10			
			189MC (10MC Swp.)	187. 25MC 191. 75MC	9			
			183MC (10MC Swp.)	181. 25MC 185. 75MC	8			
			177MC (10MC Swp.)	175. 25MC 179. 75MC	7			
			85MC (10MC Swp.)	83. 25MC 87. 75MC	6			
			79MC (10MC Swp.)	77. 25MC 81. 75MC	5			
			69MC (10MC Swp.)	67. 25MC 71. 75MC	4			
			63MC (10MC Swp.)	61. 25MC 65. 75MC	3			
			57MC (10MC Swp.)	55. 25MC 59. 75MC	2			

UHF TUNER ALIGNMENT

The UHF tuner portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion is not recommended in the field.

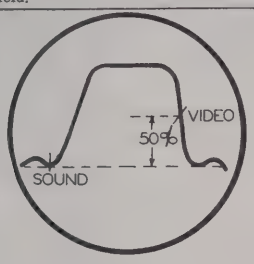


FIG. 4

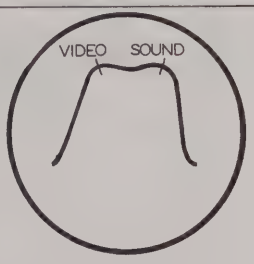
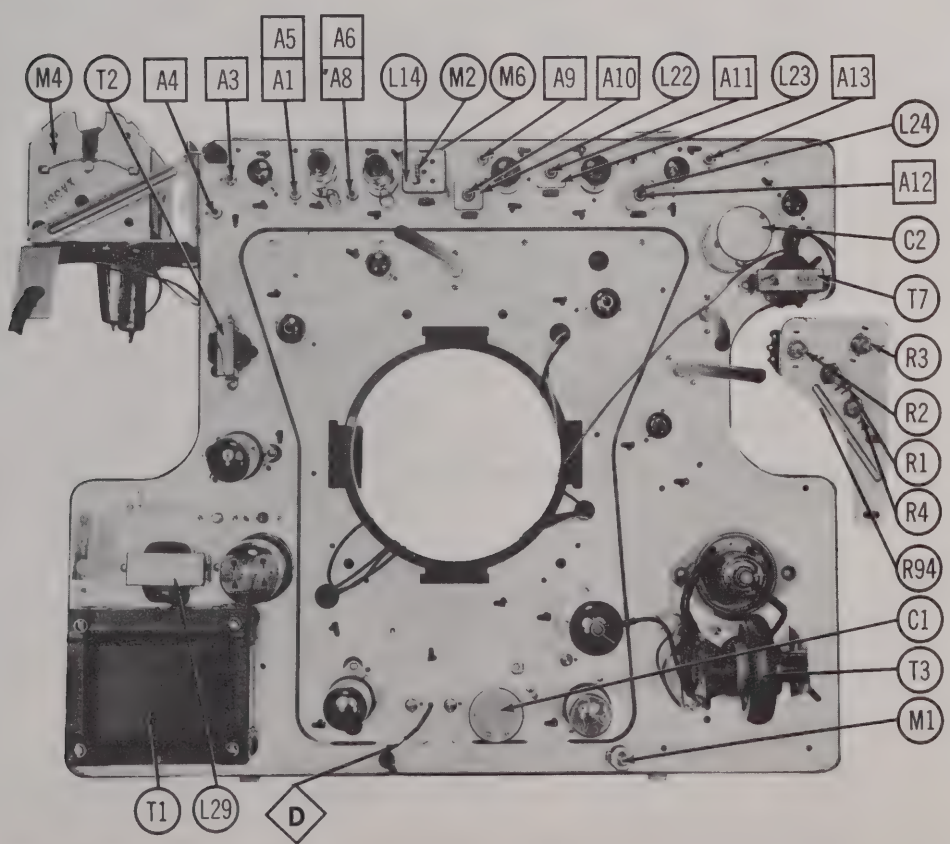


FIG. 5

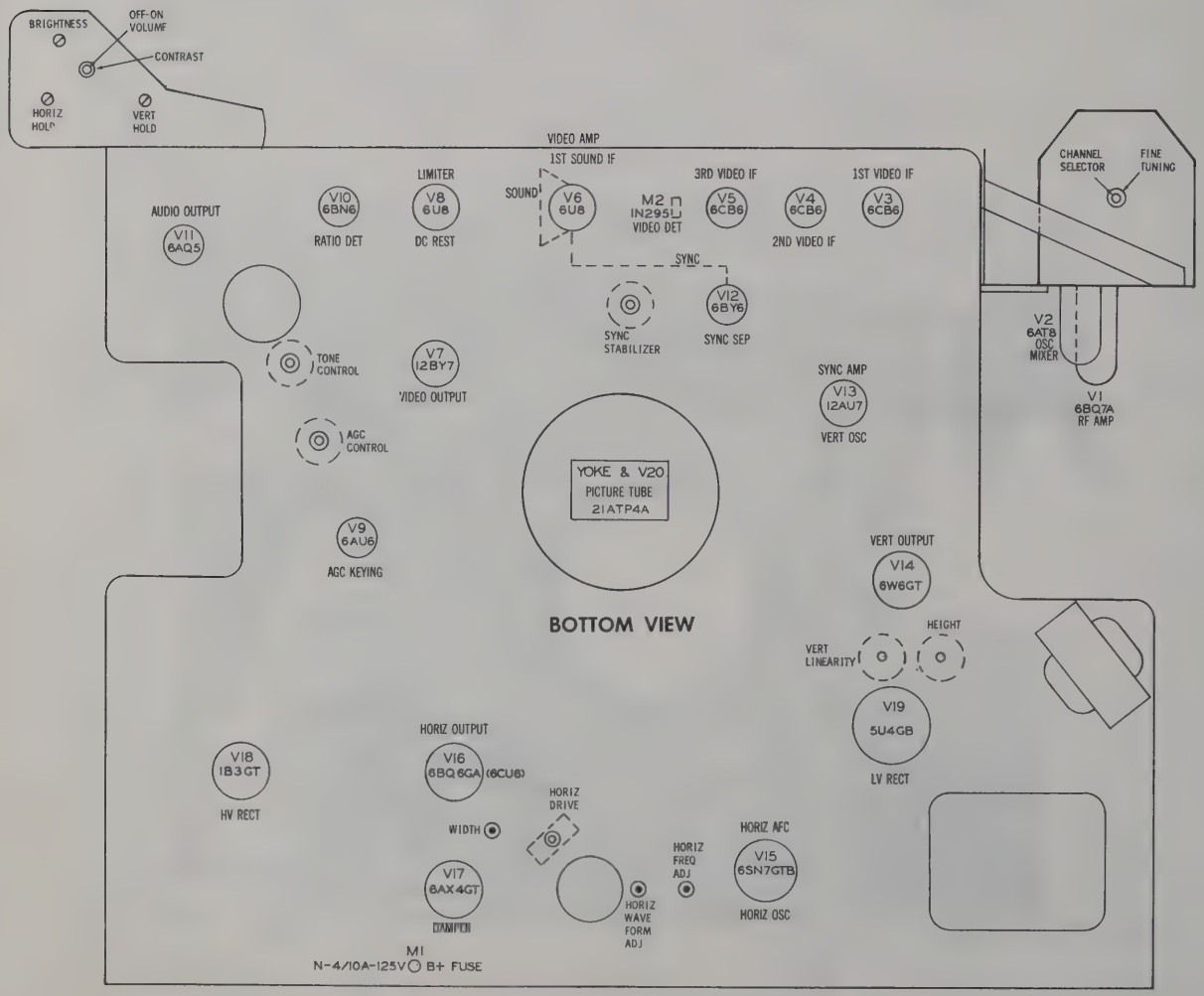


CHASSIS TOP VIEW

RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7A	INF	550KΩ	0Ω	0Ω	. 1Ω	† 1. 5KΩ	300KΩ	INF	0Ω
V 2	6AT8	10KΩ	† 7. 3KΩ	0Ω	0Ω	. 1Ω	† 17KΩ	† 50KΩ	0Ω	220KΩ
V 3	6CB6	30KΩ	47Ω	0Ω	. 1Ω	† 3. 2KΩ	† 3. 2KΩ	0Ω		
V 4	6CB6	22KΩ	47Ω	0Ω	. 1Ω	† 3. 2KΩ	† 3. 2KΩ	0Ω		
V 5	6CB6	. 2Ω	180Ω	0Ω	. 1Ω	† 2. 7KΩ	† 2. 7KΩ	0Ω		
V 6	6U8	† 9KΩ	2. 1Ω	† 35KΩ	0Ω	. 1Ω	† 35KΩ	560Ω	1. 6Ω	3. 9KΩ
V 7	12BY7	400Ω	1Meg	0Ω	0Ω	0Ω	. 1Ω	† 3. 6KΩ	† 1. 7KΩ	0Ω
V 8	6U8	0Ω	100KΩ	† 150KΩ	. 1Ω	0Ω	† 85KΩ	0Ω	1Meg	0Ω
V 9	6AU6	† 35KΩ	† 1. 7KΩ	0Ω	. 1Ω	120KΩ	† 45Ω	† 1. 7KΩ		
V 10	6BN6	300Ω	3. 5Ω	. 1Ω	0Ω	† 6. 5KΩ	6Ω	† 330KΩ		
V 11	6AQ5	500KΩ	270Ω	. 1Ω	0Ω	† 1KΩ	† 500Ω	500KΩ		
V 12	6BY6	50KΩ	0Ω	0Ω	. 1Ω	† 820KΩ	† 30KΩ	2. 2Meg		
V 13	12AU7	▲ 1. 7Meg	2Meg	220Ω	. 1Ω	. 1Ω	† 13KΩ	47KΩ	0Ω	0Ω
V 14	6W6GT	TP	0Ω	† 450Ω	† 450Ω	2. 2Meg	NC	. 1Ω	1KΩ	
V 15	6SN7GTB	400KΩ	† 56KΩ	0Ω	1. 5Meg	† 10KΩ	400KΩ	. 1Ω	0Ω	
V 16	6BQ6GA	TP	0Ω	NC	† 6. 8KΩ	470KΩ	NC	. 1Ω	100Ω	TOP CAP ▲ 10Ω
V 17	6AX4GT	NC	NC	750KΩ	NC	† 45Ω	NC	. 1Ω	0Ω	
V 18	1B3GT		PINS	1-8	HAVE	INF	RESISTANCE			TOP CAP ▲ 335Ω
V 19	5U4GB	NC	30KΩ	NC	23Ω	NC	20Ω	NC	30KΩ	
V 20	21ATP4A	0Ω	1Meg	PIN 6 † 100KΩ	PIN 10 ▲ 420KΩ	PIN 11 † 250KΩ	PIN 12 . 1Ω			

† MEASURED FROM PIN 2 OF V19.
▲ MEASURED FROM PIN 3 OF V17.
TP-TIE POINT.
NC-NO CONNECTION.



TUBE PLACEMENT CHART

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6BQ7A	
V2	Mixer-Oscillator	6AT8	
V3	1st. Video IF Amplifier	6CB6	
V4	2nd. Video IF Amplifier	6CB6	
V5	3rd. Video IF Amplifier	6CB6	
V6	Video Amplifier-Sound IF Amplifier	6U8	
V7	Video Output	12BY7	
V8	DC Restorer-Limiter	6U8	
V9	AGC Keying	6AU6	

ITEM No.	USE	TYPE	NOTES
V10	Audio Detector	6BN6	
V11	Audio Output	6AQ5	
V12	Sync Separator	6BY6	
V13	Sync Amplifier-Vert. Osc.	12AU7	
V14	Vert. Output	6W6GT	
V15	Horiz. AFC-Horiz. Osc.	6SN7GTB	
V16	Horiz. Output	6BQ6GA	Note 1
V17	Damper	6AX4GT	
V18	HV Rectifier	1B3GT	
V19	LV Rectifier	5U4GB	

Note 1. A 6CU6 may be used in some versions.

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	CORONADO PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V20	21ATP4 ①	21ATP4 ①	21ATP4 ①	21ATP4/ 21ATP4A②	① Aluminized ② Silver screen "85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	CORONADO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲80	300	45X428	AFH4-07	B068	FP235	TMD-79	D-390	R2203 *
B	■20	300			BR205	TC36	TD-25-50	FM-0525	
C	▲20	50							
C2A	▲80	300	45X429	AFH3-29-50	B081	FP229.4	TMD-33	D-175	R2204 *
B	■60	300			BR505	TC39	TD-50-50	FM-0550	
C	▲40	50							
C3	4	50	47X418	PRS150V4	BR550	TC30	TD-4-50	MMT-0505	TVA-1303
C4	4	50	47X418	PRS150V4	BR550	TC30	TD-4-50	MMT-0505	TVA-1303

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	CORONADO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	120		13L8V121K		D6-121		811-121			
C6	5		13L8C050D	NP0-DI5	TCZ-5	Z011	NP0A-050	ZT-555	5TCCB-V47	
C7	6.8		13L8C6R81	NP0-DI6.8	TCZ-6.8	Z013	NP0A-6R8	ZT-5568	5TCCB-V68	
C8	6.8		13L8C6R81	NP0-DI6.8	TCZ-6.8	Z013	NP0A-6R8	ZT-5568	5TCCB-V68	
C9	3			NP0-DI3	TCZ-3R3	Z007	NP0A-030	ZT-553	5TCCB-V33	
C10	5-15		31B-901-02							
C11	800		13M-320EA-102ZC							
C12	2.2		13L8GP2R2C	NP0-SI2.2	TCZ-2R2	Z006	NP0A-2R2		5TCCB-V22	
C13	1000		13L8X102Z	BPD-001	DD-102	K069	811-102	DC-521	5HK-D1	
C14	.5-3		31B-902		829-3		3115-01-0R5	CT565A		
C15	800		13M-320EA-102ZC							
C16	800		13M-320EA-102ZC							
C17	.5-3		31B-902		829-3		3115-01-0R5	CT565A		
C18	60		13M-320Q-600J							
C19	1		13D-111-20	NP0-SI1	TCZ-1		NP0A-010		5TCCB-V1	
C20	10		13L8UA100D							
C21	10		13L8Q100A							
C22	1000		13L8X102Z	BPD-001	DD-102	K069	811-102	DC-521	5HK-D1	
C23	1000		13L8X102Z	BPD-001	DD-102	K069	811-102	DC-521	5HK-D1	
C24	800		13M-320EA-102ZC							
C25	.47	200	RCP10M2474M	P288N-47		CUB2P47		PT4047	2TM-P47	
C26	47			NP0-SI47	TCZ-47	TZ22	831-470	ZT-5447	MS-447	
C27	47			NP0-SI47	TCZ-47	TZ22	831-470	ZT-5447	MS-447	
C28	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C29	680			BPD-00068	DD-681	K065	811-681	UC-5368	5GA-T68	
C30	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C31	56			NP0-SI56	TCZ-56	TZ24	NP0-337-560			
C32	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C33	.47	200	RCP10M2474M	P288N-47		CUB2P47		PT4047	2TM-P47	
C34	680			BPD-00068	DD-681	K065	811-681	UC-5368	5GA-T68	
C35	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C36	68			NP0-SI68	TCZ-68	TZ26	NP0-337-680		5TCC-Q68	
C37	560		80X9	1464-00056	D6-681	1R5T56	NP0-337-680		MS-356	
C38	470		80X4	1464-00047	DD-471	5R5T47	811-471	UC-5347	1FM-347	
C39	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C40	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C41	100			NP0-SI100	TCZ-100	TZ30	801-101	ZT-531	5TCC-T1	
C42	.047	400	RCP10M4473M	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C43	.1	400		P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C44	.015	600	RCP10M6153M	P688N-15	DD16-153	CUB6S15		PT6115	6TM-S15	
C45	.047	600		BPD-05	DF-503	CUB6S47		PT6147	6TM-S47	
C46	.1	200		P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C47	1000		47X753	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C48	1.5			NP0-SI1.5	TCZ-1R5	TZ04	NP0A-1R5	ZT-5515	5TCCB-V15	
C49	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C50	5000			BPD-005	DD-502	K080	811-005	DC-525	5HK-D5	
C51	100			NP0-SI100	D6-101	TZ30	801-101	ZT-531	5TCC-T1	

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No.	RATING CAP	VOLT	REPLACEMENT DATA CORONADO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	IRC PART No.	MALLORY PART No.	SPRAGE PART No.	NOTES
C52A	.1000		#0X3	BPD-2X006	DD3-102	UK069	412-001	DCD521	5HK-2D1	
B	1000									
C55A	.1000		#0X3	BPD-2X001	DD3-102	UK069	412-001	DCD521	5HK-2D1	
B	2000									
C54	.33									
C55	5000		#0X4	BPD-00047	DD-471	K080	511-471	UC-5347	5GA-P47	
C56	5000			BPD-005	DD-502	K060	511-005	DC-525	5HK-D5	
C57	.0047	600	RCP10M4732M	BPD-0047	DF-473	CUNED47	CQ95-333-472	PT8347	6TM-D47	
C58	.033	600	RCP10M3324M	BPD-0027	DF-333	CUNES22	417-02	PT6332	6TM-S22	
C59	330	500	47X570	1469-00033		SR5T33			MS-333	
C60	5000			BPD-005	UD-502	K060	41U-005	DC-525	5HK-D5	
C61	.047	400	RCP10M4473M	BPD-05	DF-503	CUNE47		PT4147	4TM-S47	
C62	.047	400	RCP10M4473M	BPD-05	DF-503	CUNE47		PT4147	4TM-S47	
[illegible]	.0047							DC-522		
B	5000		†TR2T	†PA110	†PC-100	†U5T2M	†1404-01	DC-525	†Y1	
C	5000							DC-525		
C64	.01	400		BPD-01	DD-103	CUNE41	GP3-333-103	PT411	4TM-S1	
C65	.033	600	RCP10M3323M	BPD-033	DF-333	CUNE33	417-03	PT4133	6TM-S33	
C66	.047	600	RCP10M4473M	BPD-06	DF-503	CUNE047		PT4647	6TM-S47	
C67	.047	600	RCP10M4473M	BPD-06	DF-503	CUNE647		PT4647	6TM-S47	
C68	.047	600	RCP10M4473M	BPD-06	DF-503	CUNE647		PT4647	6TM-S47	
C69	.1	400		7469N-1	DF-104	CUNE1		PT401	4TM-P1	
C70	18	500	RCM20B180K	1469-000018	TCS-18	33R5xQ18	NPOE-180		MS-418	
C71	82	500	RCM20B582K	1469-000083	TCS-82	33R5xQ83	NPO-337-820		MS-482	
C72	100	500		1469-00001	TCS-100	33R5T1	NPO-337-101	MC-B535	MS-31	
C73	.047	400	RCP10M4473M	BPD-05	DF-503	CUNE647		PT4147	4TM-S47	
C74	.047	300	RCP10M4473M	BPD-05	DF-503	CUNE647		PT4147	3TM-S47	
C75	.033	500	RCP10M3323M	BPD-03	DF-333	CUNE633	417-03	PT4133	5TM-S33	
C76	.47	300	RCP10M3474M	P968N-47		CUBP147			3TM-P47	
C77	1000			1469-00023	TCS-220	33R5T33	NPO-335-332		MS-332	
C78	.01	400		BPD-01	DD-103	CUNE41	GP3-333-103	PT411	4TM-S1	
C79	820	500	RCM28B821K	1464-00062		1R5T83			MS-382	
C80	680			1464-00068	DD-681	K065	511-681	UC-5368	MS-368	
C81	.047	400	RCP10M4473M	BPD-05	DF-503	CUNE647		PT4147	4TM-S47	
C82	330	5000	47X756		DD60-330					
C83	.1	600		P968N-1	DF-104	CUNE1		PT601	6TM-P1	
C84	.15	200	RCP05M0154M	P968N-15		CUBP215		PT6015	2TM-P15	
C85	10000		47X815	BPD-01	DD-103	K082	411-01	DC-511	5HK-S1	
C86	10000			BPD-01	DD-103	K083	511-01	DC-511	5HK-S1	
C87	.047	400		P968N-1	DF-104	CUNE1		PT601	6TM-P1	Note 1

† Items C83A, C83B, C83C, R77A, R77B and R77C are combined in one unit.
Note 1 Not used in some versions

CONTROLS

ITEM No	RATING RESIST ANCE	WATTS	REPLACEMENT DATA CORONADO PART No	CENTRALAB PART No	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No	INSTALLATION NOTES
R1A	2000		8T632A	F1-4	RTV-579	* QJ-873	UF13L	Contrast (Panel)
B	Mtg.			R1-54			UR16-F25 ①	Volume (Panel at 500KΩ (Rear)
C	Switch			KB-2			UB-27	Attach to R1B.
R2A	500kΩ	1	B40X396C	AB-59	A47-500K-S	QJ-153	U-50	Brightness
B	5MΩ		Not Req.	AB-9	R2-5/8	MQ	DE-37	Attach to R2A.
R3A	5Meg	1	B4xX396	AB-742	A47-1.5Meg-S	QJ-138	U-155	Vert. Hold
B	5Meg		Not Req.	AB-8	R2-5/8	MQ	DE-37	Attach to R3A.
R4A	50kΩ	1	B40X395C	AB-31	A47-50K-S	QJ-132	U-58	Horizontal Hold
B	5MΩ		Not Req.	AB-8	R2-5/8	MQ	DE-37	Attach to R4A.
R5A	100kΩ	1	B40X407	AB-40	A47-100K-S	QJ-138	TA15L	Tone
B	5MΩ		Not Req.	AK-4	FK3-1	RQ	Not Req.	Attach to R5A.
R6A	2.5Meg	1	▪ B40X405	AB-43	A47-2.5Meg-S	QJ-239	TA25L	AGC-Note 1
B	5MΩ		Not Req.	AK-19	RN-3		Not Req.	Attach to R6A.
R7A	1.5Meg	1	▪ B4XX405	AB-39	A47-1.5Meg-S	QJ-233	TA15L	Sync Stability-Note 2
B	5MΩ		Not Req.	AK-19	RN-3		Not Req.	Attach to R7A.
R8A	2.5Meg	1	B4XX405A	AB-43	A47-2.5Meg-S	QJ-239	TA25L	Height
B	5MΩ		Not Req.	AK-4	FK3-1	RQ	Not Req.	Attach to R8A.
R9A	500Ω	1	B40X41J	AB-6	A47-1500-S	QJ-109	PTA15L	Vert. Linearity
B	5MΩ		Not Req.	AK-19	RN-3	BQ	Not Req.	Attach to R9A.
R10	500Ω	2	40X39T		39-500			Buzz-Wire Wound

Note 1. Later production receivers will use an alternate control Part No. 40X412 in this application.
Note 2. Later production receivers will use an alternate control Part No. 40X405 in this application.
† Universal Replacement (Mallory Exact Duplicate Part No. UE78).
▪ Versions using control Part No. 40X405 for replacement remove the 2.9 megohm resistor connected from high side to arm of control.
▪ Versions using control Part No. 40X405 for replacement remove the 3.9 megohm resistor (R109) used with the old control.
* Concentrishaft Equivalent: K-2 Kit, Base Elements and Shafts, B11-106 & P6-200 (Panel)
B13-137 X & R1-218 (Rear)
76-2 (Switch)

RESISTORS

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA CORONADO PART No.	IRC PART No.	NOTES
R11	680kΩ	1	12TAE684M	BTS-680K	
R12	470Ω	1	12TAE472K	BTS-470	
R13	420kΩ	1	12TAE624K	BTS-420K	
R14	470kΩ	1	12TAE474K	BTS-470K	
R15	220kΩ	1	12TAE224M	BTS-220K	
R16	820Ω	1			
R17	10kΩ	1	12TAE103K		
R18	5600Ω	1	12TAE562K		
R19	15kΩ	1	12TAE153K		
R20	47kΩ	1	12TAE473K		
R21	150Ω	1		BTS-150	
R22	680Ω	1		BTS-680	
R23	330kΩ	1		BTS-330K	
R24	820kΩ	1		BTS-820K	
R25	470Ω	1			
R26	1000Ω	1		BTS-1000	
R27	1000Ω	1		BTS-1000	
R28	47Ω 5%	1		BTS-47	
R29	47Ω	1		BTS-470	
R30	68kΩ	1			
R31	1000Ω	1		BTS-1000	
R32	47Ω 5%	1		BTS-47	
R33	47kΩ	1			
R34	22kΩ	1			
R35	1000Ω	1		BTS-1000	
R36	180Ω	1		BTS-180	
R37	3300Ω 5%	1		BTS-3300	
R38	5600Ω	1		BTS-5600	
R39	680Ω	1		BTS-680	
R40	820Ω	1		BTS-820	
R41	1Meg	1		BTS-1Meg	
R42	3600Ω	4	43X331		

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA CORONADO PART No.	IRC PART No.	NOTES
R43	68Ω	1		BTS-68	
R44	1Meg	1		BTS-1Meg	
R45	100kΩ	1		BTS-100K	
R46	1200Ω	1		BTS-1200	
R47	100kΩ	1		BTS-100K	
R48	22kΩ	1		BTS-22K	
R49	100kΩ	1		BTS-100K	
R50	33kΩ	1		BTS-33K	
R51	47kΩ	1		BTS-47K	
R52	68kΩ	1		BTS-68K	
R53	22kΩ	1		BTS-22K	
R54	100kΩ	1		BTS-100K	
R55	47kΩ	1		BTS-47K	
R56	47kΩ	1		BTS-47K	
R57	33kΩ	1		BTS-33K	
R58	56Ω	1		BTS-560	
R59	100kΩ	1		BTS-100K	
R60	82kΩ	1		BTS-82K	
R61	68kΩ	1		BTS-68K	
R62	180Ω	1		BTS-180	
R63	330kΩ	1		BTS-330K	
R64	4.7kΩ	1		BTS-4700	
R65	120kΩ	1		BTS-120K	
R66	470Ω	1		BTS-470	
R67	270Ω	1		BTS-270	
R68	10kΩ	1		BTS-10K	
R69	47kΩ	1		BTS-47K	
R70	150kΩ	1		BTS-150K	
R71	2.2Meg	1		BTS-2.2Meg	
R72	270kΩ	1		BTS-270K	
R73	820kΩ	1		BTS-820K	
R74	27kΩ	1		BTS-27K	

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA CORONADO PART No.	IRC PART No.	NOTES
R75	47kΩ			BTS 47K	
R76	470Ω			BTS- 470	
R77A	22kΩ			BTS- 22K	
B	9200		† 76X7	BTS-9200	
C	1200			BTS-1200	
R78	1 2Meg			BTS-- 2Meg	
R79	180kΩ			BTS- 180K	
R80	2 2Meg			BTS-2.2Meg	
R81	1Meg			BTS-1Meg	Note 1
R82	22kΩ			BTS-22K	
R83	6200Ω			BTS-6200	Note 2
R84	2 2Meg			BTS-2.2Meg	
R85	680Ω			BTA-680	
R86	56Ω				
R87	56Ω				
R88	220kΩ				
R89	100kΩ				
R90	820kΩ				
R91	82kΩ				
R92	330kΩ				

ITEM No	RATING OHMS	WATT	REPLACEMENT DATA CORONADO PART No.	IRC PART No.	NOTES
R93	3400Ω				
R94	100kΩ				
R95	82kΩ				
R96	22kΩ				
R97	1Meg			BTS-1Meg	
R98	58kΩ			BTS-58K	
R99	68Ω				
R100	470kΩ				
R101	68Ω	2			
R102	100Ω	2			
R103	470kΩ			BTS-470K	
R104	4700Ω				
R105	1700Ω	10	43X398	1 9AA-1750	
R106	100Ω	1		BTA-10	
R107	100kΩ	2		BTB-100K	
R108	270kΩ			BTB-270K	
R109	3.9Meg			BTB-3.9Meg	Note 3
R110	68Ω				Note 4
R111	100Ω			BTB-100	

Note 1. Some versions use a 470kΩ 1W resistor in this application.
Note 2. Some versions use a 12kΩ 1W resistor in this application.
Note 3. Used only with Sync stability control No. 40X405.
Note 4. Not used in some versions.
† Items R77A, R77B, R77C, C83A, C83B, C83C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING PRI	SEC. 1	SEC. 2	SEC. 3	CORONADO PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117VAC	325VCT @ 175A	5V @ 3A	6.3V @ 9.6A	553X54-A			PT830 ①	P8332 ②	2GR33 ③	R-61BC ①

① Parallel and phase 6.3V ③ 6A windings, tape 5.5V ④ 1.2A winding.
② Tape high HV winding, tape 5V ④ 3A winding. Parallel and phase 6.3V ⑤ 8A windings.
③ Parallel and phase 6.3V windings.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA CORONADO PART No.	Halldorson PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	Vert. Osc. Trans.	54X10	B8702	A-3003	209T1 ①	V405	A-6125	26A03	A-97X
T3	Horiz. Output Trans	53X355	FB413 & RF800 *	HVO-38 & 335T1 & 212R1 ①	X0394 & 502B16 ②	A-8353 *	FLY-16 & FLY-18 *	D-80 & WC-18 *	A-98X
T4	Vert. Output Trans.	51X173	Z1900 ③	A-2423 ①	V302 ①	2A-8142 ①	26B72 ②	2A-108X ②	
T5A	Yoke(90°)Horiz(19MH	9A2385-1 &	DF607 ③	MDF-92 ①	225D1 ②	Y9291493	DY-16A ③	Y-16 ③	Y-41-7 ③
B	Yoke(110°)	9A2385 ③ & 2A433 ④							
T6	Width Coil (19MH)	9A2381	RF802 ③	MWC-6	21LR1	20LR05	WC-8	WC-23	WC-12 ⑩

① Drill new mounting hole(s).
② Use 8 ω turns ratio.
③ Connect as auto transformer.
④ Includes resistance R86 and R87.
⑤ Alternate Coronado part number
⑥ Yoke rear cover and centering device.
⑦ Use original rear cover and centering device.
⑧ Use original horizontal yoke damping network.
⑨ Do not use tap.
⑩ Connect to coded red and blue terminals.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
8	9	9	9	9	8	9	9
4	7	7	7	7	1	7	7
3	7	7	7	7	1	7	7
2	4-Also See Note ①	4-Also See Note ①	4-Also See Note ①	"T"-Also See Note ①	3-Also See Note ①	"T"-Also See Note ①	4-Also See Note ①
1	3	3	3	3	3	3	3
5	1	1	1	1	4	1	1
Connect Width Coil Across	1 & 5	Terms. #1 & #2 of RP800 Across 3 & 1	MWC-11 Across 3 & 1	212R1 Across 3 & 1	20U16 Across 3 & 1	6 & 7	WC-18 Across 3 & 1	Red & Blue Terms. of WC-23 Across 3 & 1
Special Notes		⑪ ⑫	⑪ ⑫	⑪ ⑫	⑪ ⑫	⑪ ⑫ ⑬	⑪ ⑫	⑪ ⑫

⑪ Connect approximately 100-150MMF @ 2KV in series with resistor R104, and connect across horizontal yoke terminals #3 and #5.
⑫ Change values of resistors R55 and R56 as necessary to obtain required peak to peak pulse voltage at plate of V8, AGC Keying tube.
⑬ Ground either terminal #6 or terminal #7.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI	SEC	REPLACEMENT DATA CORONADO PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T7	4.7KΩ	3-4Ω	51X176	21D99	A2820	A3877			

SPEAKER

ITEM No.	RATINGS SIZE	FIELD	V C IMP.	REPLACEMENT DATA CORONADO PART No.	QUAM PART No.	RCA TYPE No.	NOTES
SP1	10"	PM	3-4Ω	12A393	10A31	237G	① Used in some versions.
	6"	PM	3-4Ω	12A528 ①	6A1	239G	
SP2	4"	PM	3-4Ω	12A522	4A07	233G	

COILS (RF-IF)

ITEM No.	USE	DC RES PRI.	DC RES SEC.	REPLACEMENT DATA CORONADO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	Ant. Matching Trnas.	0Ω	0Ω	31TA-413				
L3	Ant. Matching Trnas.	0Ω	0Ω	31TA-413				
L3	FM Trap	0Ω		31T-417				
L4	IF Trap	.5Ω		31T-418-01				
L5A	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-308-D				Channel 2.
B	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-308-D				Channel 3.
C	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-304-D				Channel 4.
D	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-305-D				Channel 5
E	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-306-D				Channel 6.
F	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-307-D				Channel 7.
G	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-308-D				Channel 8.
H	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-309-D				Channel 9.
I	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-310-D				Channel 10.
J	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-311-D				Channel 11.
K	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-313-D				Channel 13.
L	Ant., RF, Mixer Grid, Osc. Coils	0Ω		31M-313-D				
L6	Fil. Choke	0Ω		34A-732				
L7	Neut. Coil	0Ω		31B-727				
L8	RF Coil	0Ω		36A-154-01				
L9	Osc. Plate	.1Ω		31GA-505				
L10	39MC Trap	0Ω		9A2369		TV-153	6235	
L11	1st. Video IF	.1Ω		9A2365		TV-131	6236	
L12	2nd. Video IF	.3Ω	.3Ω	9A2363			6232	Includes 47.25MC Trap.
L13	3rd. Video IF	.2Ω	.2Ω	9A2364			6231	Includes 41.25MC Trap.
L14	Series Peaking Coil	5.5Ω		9A2375		TV-130	6176	30 Microhenries.
L15	Series Peaking Coil	9.5Ω		36A35		TV-3093*	TV-1H*	82 Microhenries; Wound On 3.9KΩ Resistor.
L16	Shunt Peaking Coil	20Ω		36A34		TV-160	6134	360 Microhenries.
L17	Shunt	4.5MC	Trap	9A2382				
L18	Shunt Peaking Coil	10Ω		36A36		TV-3100	TV-1K	100 Microhenries.
L19	Shunt Peaking Coil	1Ω		36A1		TV-3100a	6177a	100 Microhenries; Wound On 270Ω Resistor.
L20	Series Peaking Coil	13.5Ω		36A12		TV-1864	6130a	160 Microhenries; Wound On 22KΩ Resistor.
L21	Shunt Peaking Coil	18Ω		36A37		TV-1854	6181a	235 Microhenries; Wound 8.2KΩ Resistor.
L22	1st. Sound IF	2.1Ω		9A2383				
L23	2nd. Sound IF	3.5Ω	3.5Ω	9A2368		TV-1492	6203	
L24	3rd. Sound IF	3.5Ω	3.5Ω	9A2368		TV-1493	6203	
L25	Quadrature Coil	80		9A2387		20-1005	1680	
L26	RF Choke	.1Ω		9A2380		19-1001	4804	1.5 Microhenries.

* Parallel with 3.9KΩ resistor.
▪ Parallel with 270Ω resistor.
▪ Parallel with 8.2KΩ resistor
▪ Parallel with 22KΩ resistor

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES. PRI.	SEC.	REPLACEMENT DATA CORONADO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No.	Ram PART No.	Thordarson PART No.	NOTES
L27	78Ω		9A2372			6211†				Horiz. Osc Tripod & 55Ω. Horiz. Waveform.
L28	80Ω		9A2371							

† Enlarge mtg. hole.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 ~(y)	REPLACEMENT DATA CORONADO PART No.	Halldorsen PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L29	.270A	41Ω	18H	52X95-4	C5037 ①	C2968 ①	C2326 ①	28C41 ①	C-23X ①

† Drill one new mounting hole.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA CORONADO PART No. FUSE	HOLDER	LITTELFUSE PART No. FUSE	HOLDER	BUSS PART No. FUSE	HOLDER
M1	N	4/10A 125V	16X163	16X165	313, 400 (N 4/10A)	345009	N 4/10	HN 3/10-½

CORONADO MODELS TV2-9338A, TV2-9339A, TV2-9340A, TV2-9341A

F. T. F. TELEVISION, INC. DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS (Continued)

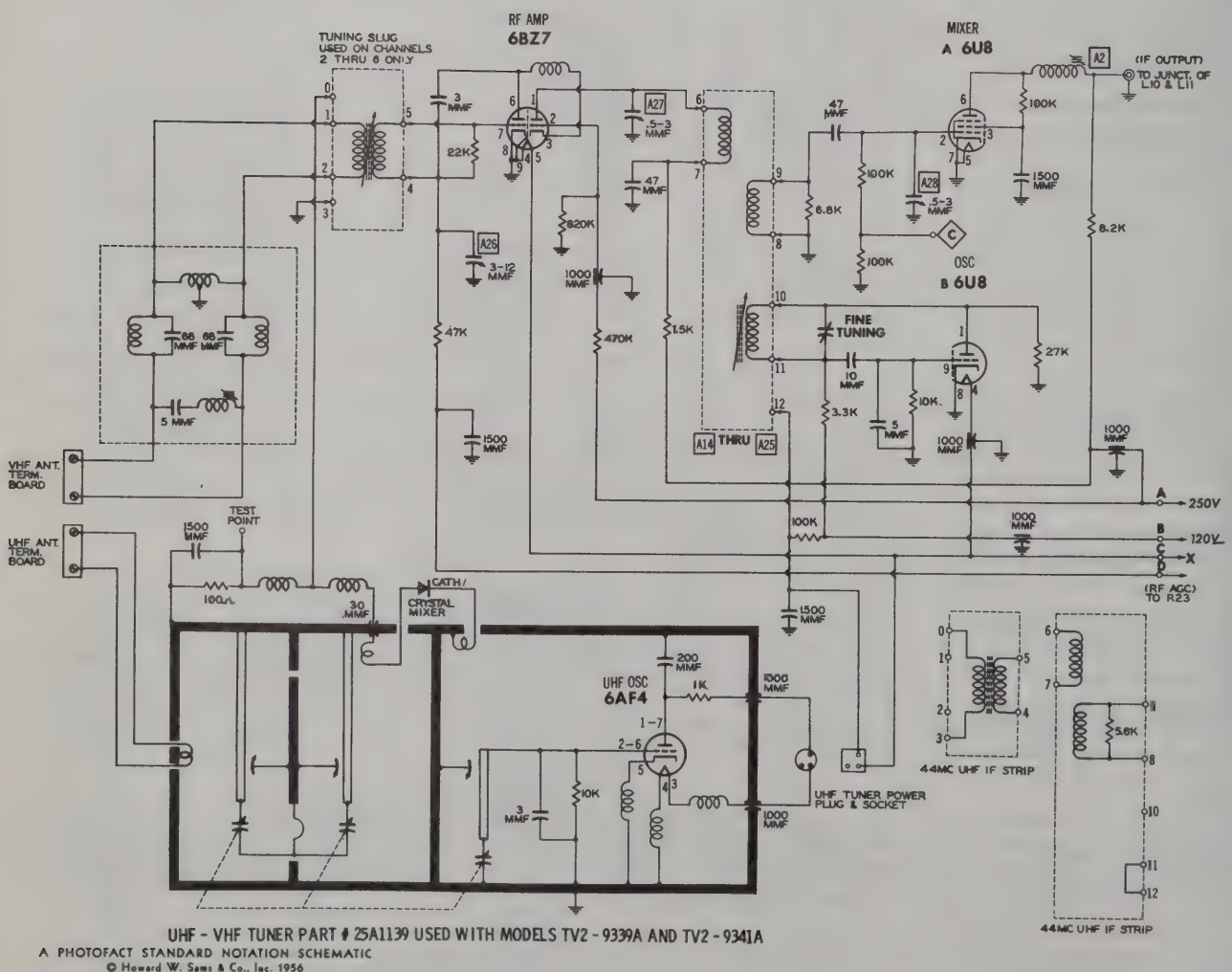
CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		CORONADO PART No.	SYLVANIA PART No.	
M2	1N295 *	17X190	1N60	Video Detector (Pigtail)

* Some versions may use crystal diode types CK706A or 1N60.

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M3	Dial Light	7A103	#47
M4	Tuner	25A1137	VHF- Models TV2-9338A, TV2-9340A
M5	Tuner	25A1139	VHF-UHF Combination; Models TV2-9339A, TV2-9341A
M6	Video Det. Assy.	9A2370	Includes M2, Coils and Capacitors
M7	Centering Magnet	2A435	Includes Deflection Yoke (T5) Rear Cover
M8	Ion Trap	2A421	
B3	Trimmer Cap.	17A271	Horizontal Drive (170-700MMF)
	Knob	S-38A69	Fine Tuning Assembly-VHF Models
	Knob	S-38A68	Channel Selector Assembly-VHF Models
	Knob	S-38A70	Contrast Assembly-UHF-VHF Models
	Knob	S-38A71	On-Off-Volume Assembly-UHF-VHF Models
	Knob	10A858-2	Fine Tuning Assembly (Mahogany Cabinets) UHF Models
	Knob	10A858-3	Fine Tuning Assembly (Oak Cabinet) UHF Models
	Knob	S-38A72	VHF Channel Selector Assembly -UHF Models
	Knob	S-38A73	UHF Channel Selector Assembly-UHF Models
	Knob	S-38A74	On-Off-Volume Assembly-UHF Models
	Knob	10A861-1	Secondary Controls (3 used)



UHF - VHF TUNER PART # 25A1139 USED WITH MODELS TV2 - 9339A AND TV2 - 9341A

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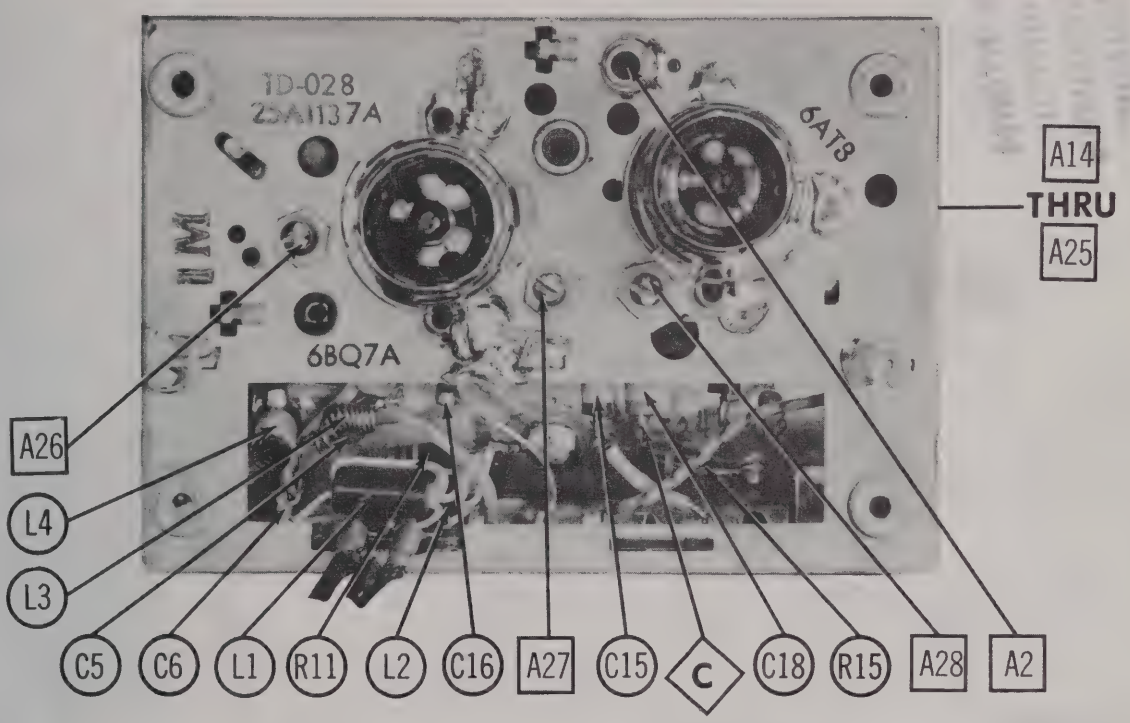
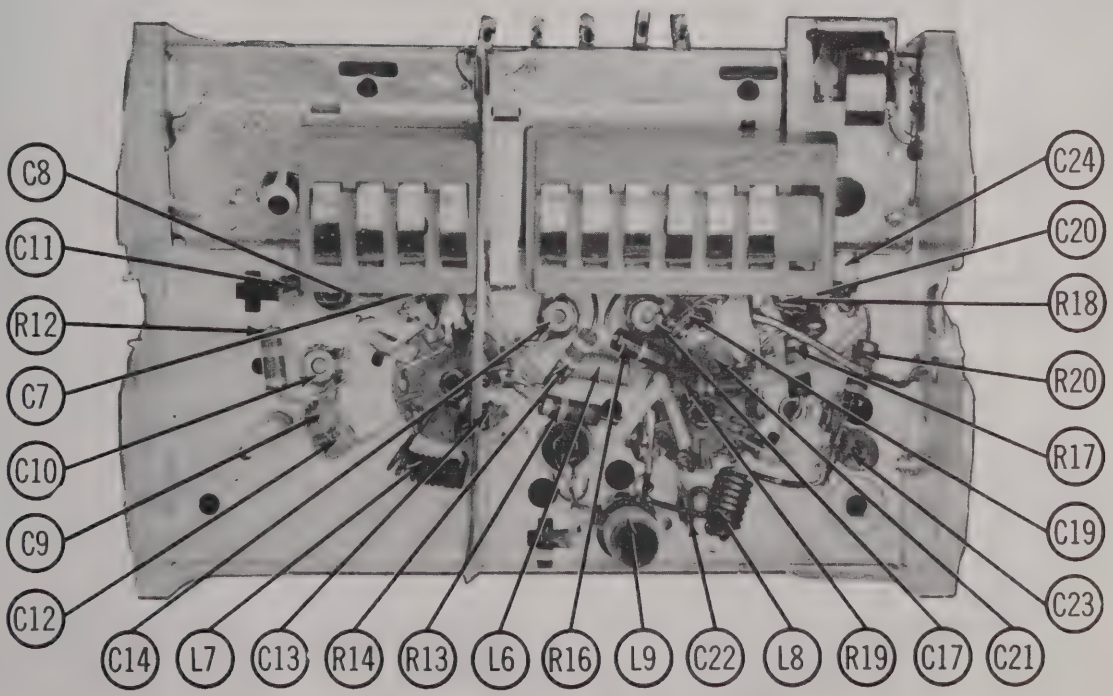
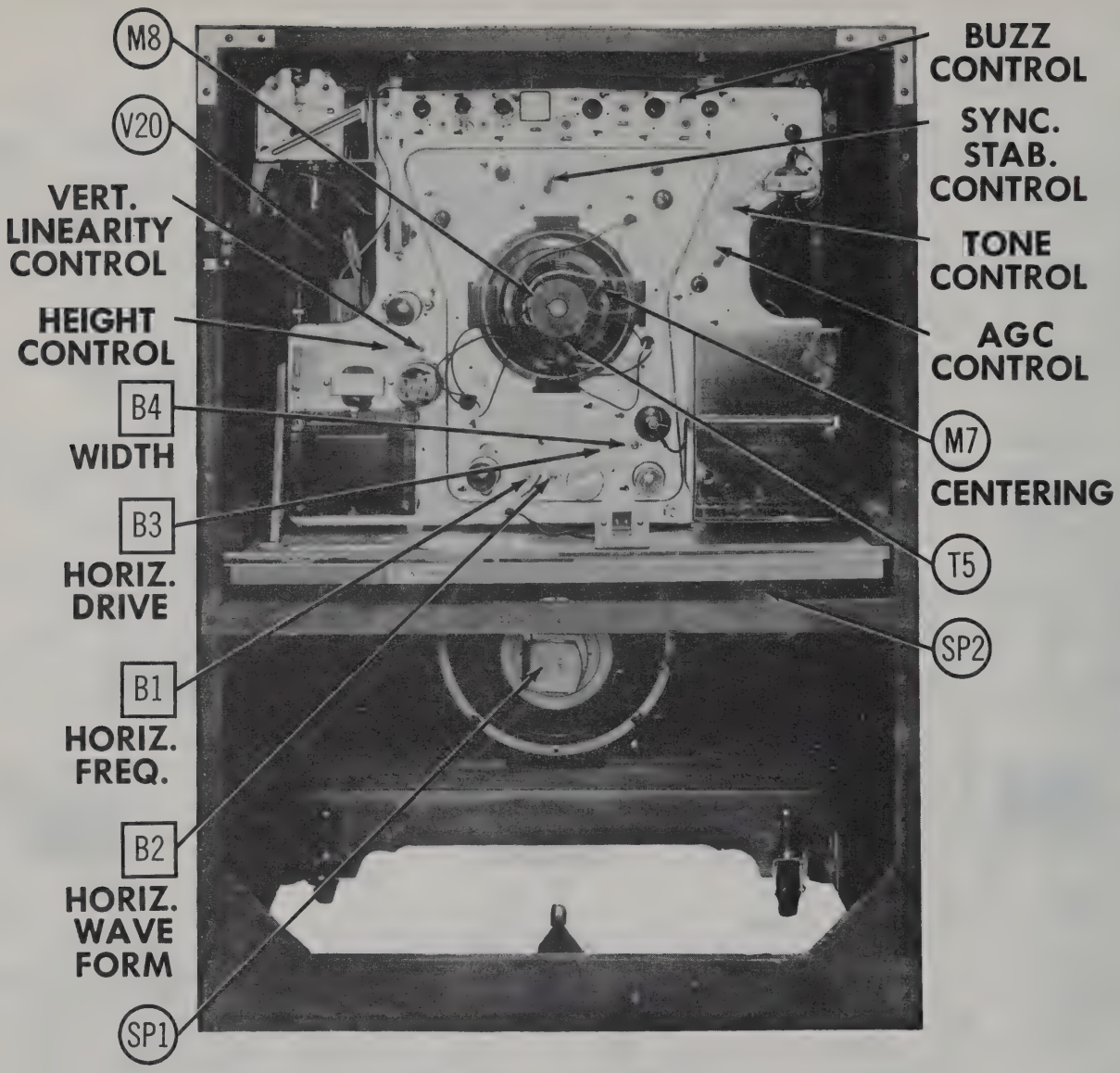
UHF VHF TUNER SCHEMATIC



RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern. Set the contrast control for normal contrast.

1. Set the horizontal hold control to its mid-range position and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

2. Connect the vertical amplifier of an oscilloscope thru 10MMF to point ◇D◇ . Connect the low side to chassis. Adjust the waveform slug (B2) until a waveform similar to Fig. 6 is obtained. While making this adjustment, keep the picture in sync with the horizontal hold control and if necessary, B1.

3. With picture in sync, turn contrast control fully counter clockwise and the brightness control clockwise so that the picture appears to be washed out. Turn the horizontal drive control (B3) clockwise until a white vertical line appears and then back slightly counter clockwise until the line disappears.

4. Adjust the width control (B4) until the picture just fills the picture mask horizontally. Reset contrast and brightness controls for normal picture.

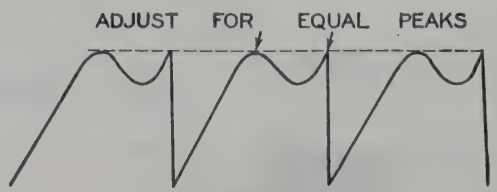
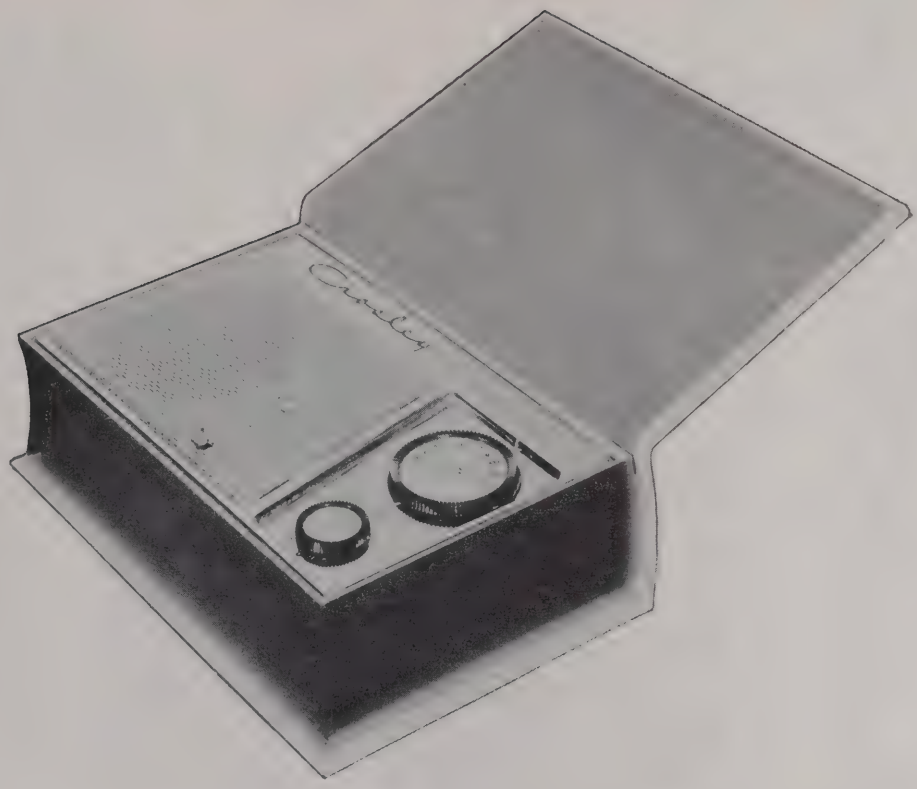


FIG. 6

CROSLEY MODELS JM-8BG, BK, BN, GN, MN, WE (Ch. R102)



CROSLEY MODELS JM-8BG, BK, BN, GN, MN, WE (Ch. R102)

TRADE NAME	Crosley Models JM-8BG, JM-8BK, JM-8BN, JM-8GN, JM-8MN, JM-8WE (Ch. R102)
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	Battery Operated Portable AM Superheterodyne Receiver With Transistorized Output
TUBES (Three)	Types 1V6 Mixer-Osc., 1AH4 IF Amplifier, 1AJ5 Det.-AVC-AF Amp.
POWER SUPPLY	4 Volts "A" Supply & 45 Volts "B" Supply RATING 45MA @ 4 Volts DC & 2MA @ 45 Volts DC
TUNING RANGE—BROADCAST	540KC - 1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Adjust osc. (A6) and ant. (A7) trimmers 1/4 turn counterclockwise from tight.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to pin 3 (grid) of 1V6 (V1). Low side to B-.	455KC (400~ mod.)	Tuning gang fully open.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output.
2.		Loop (radiated)	530KC	Tuning gang fully closed.	"	A5	"
3.		"	600KC	600KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Adjust for maximum output while rocking tuning gang.
4.		"	1620KC	Tuning gang fully open.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver.
5.		"	1400KC	Tune to 1400KC signal.	"	A7	"

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Mixer-Osc.	1V6	
V2	IF Amplifier	1AH4	
V3	Det-AVC-AF Amplifier	1AJ5	

TRANSISTORS

ITEM No.	USE	TYPE	NOTES
X1	Output	2N109	Note #1.
X2	Output	2N109	Note #1.

Note #1. Type 2N138 or 351 may be used in some versions.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	CROSLEY PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	8	50	170545-1	E96B13	EC8-50				
C2	50	6	170545-2	E96B14	EC50-6				TE-1100

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	.047	200	170630-1	BPD-05	DF-503	CUB2S47		PT4147	2TM-S47	
C4	4.7		152997-12	NPO-SI4.7	TCZ-4R7	TZ07	NPOA-4R7	ZT-5547	5TCCB-V47	
C5	10		170194-3	NPO-DI10	TCZ-10	Z018	NPOA-100	ZT-541	5TCC-Q1	
C6	.1	200	170630-2	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C7	2200		39433-10	SI2200	D6-222	TP57	GP2-333-222	UC-5222	5HK-D22	
C8	.1	200	170630-2	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C9	6		170194-1			Z012				
C10	100		170194-7	BPD-0001	DD-101	G042	811-101	UC-531	5GA-T1	
C11	1000		170194-2	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C12	100		170194-7	BPD-0001	DD-101	G042	811-101	UC-531	5GA-T1	
C13	.022	200	39433-13	BPD-02	DD-203	CUB2S2	817-02	PT4122	2TM-S22	
C14	.0047	200	39433-3	BPD-0047	DD-472	CUB6D47	811-0047	PT6247	6TM-D47	
C15	.05	150	170630-1	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	CROSLEY PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	1Meg	½	B170165-1-1				TA16A	Volume (Note #1)

Note #1. Some versions may use an alternate control Part No. 170165-1.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	CROSLEY PART No.	IRC PART No.	
R2	1Meg		39374-61	BTS-1Meg	
R3	4.7Meg		39374-77	BTS-4.7Meg	
R4	3.3Meg		39374-73	BTS-3.3Meg	
R5	10Meg		39374-85	BTS-10Meg	
R6	220K		39374-53	BTS-220K	
R7	2700Ω		39374-30	BTS-2700	
R8	120Ω		39374-14	BTS-120	
R9	8.2Meg		39374-83	BTS-8.2Meg	

TRANSFORMER (INTERSTAGE)

ITEM No.	RESISTANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	CROSLEY PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	3Ω	38Ω TAP @ 17.6Ω	170379-1						

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RESISTANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	CROSLEY PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	21ΩCT	17Ω	170378-1						

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	CROSLEY PART No.	QUAM PART No.	RCA TYPE No.	
SP1	2 3/4"	PM		170166-1			

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	CROSLEY PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	.4Ω		170532-1				
L2	Osc. Coil	2.2Ω	8.3Ω	170640-1				
L3	Input IF	20Ω	20Ω	170418-2	16-6800		10-C1	
L4	Output IF	17Ω	17Ω	170418-1	16-6801		10-C2	

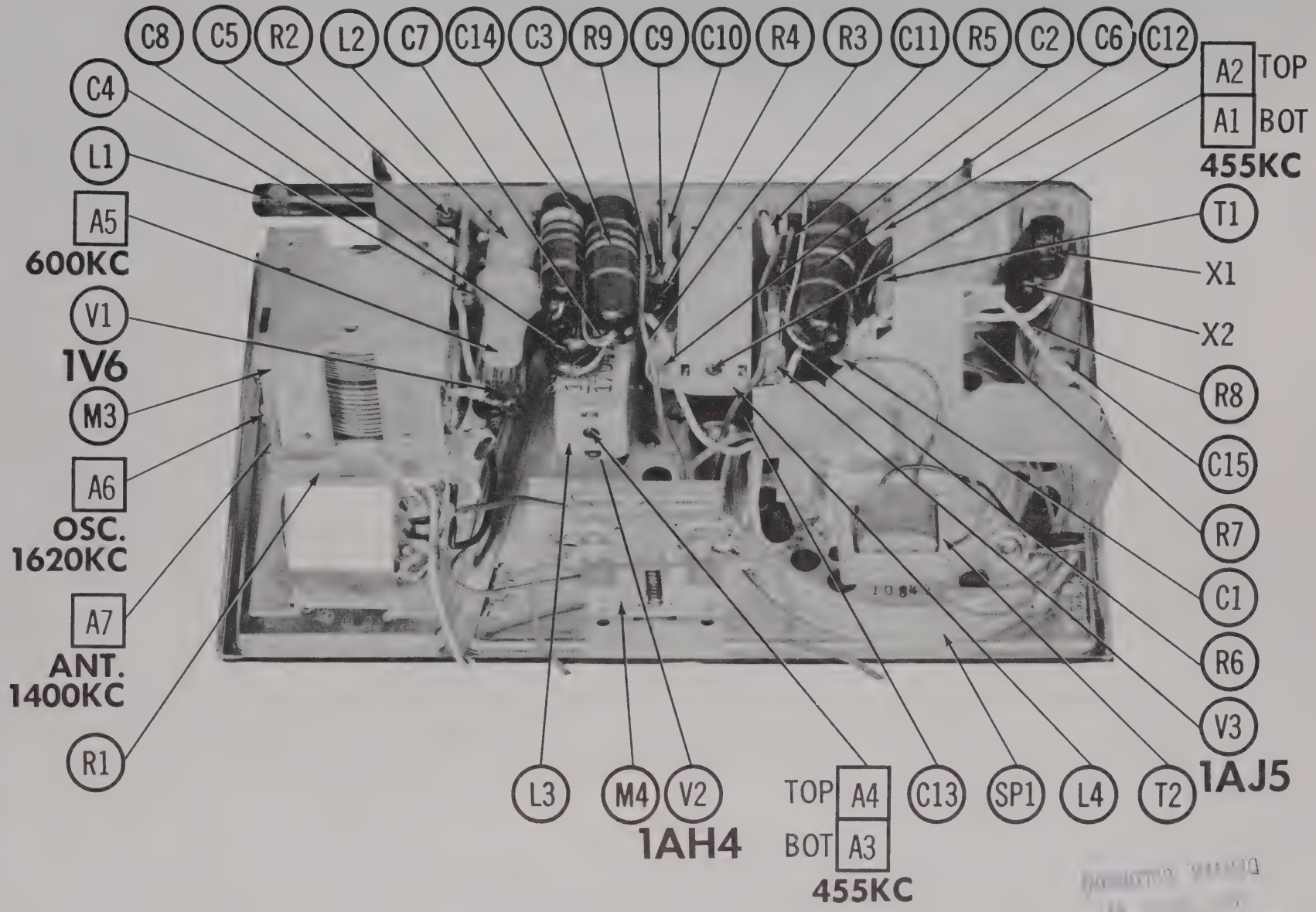
BATTERIES

ITEM No.	VOLTAGE	CROSLEY PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	4 V "A"	† EV-2	E233						
M2	45 V "B"			415			U30		

† Includes Both "A" & "B" Batteries.

MISCELLANEOUS

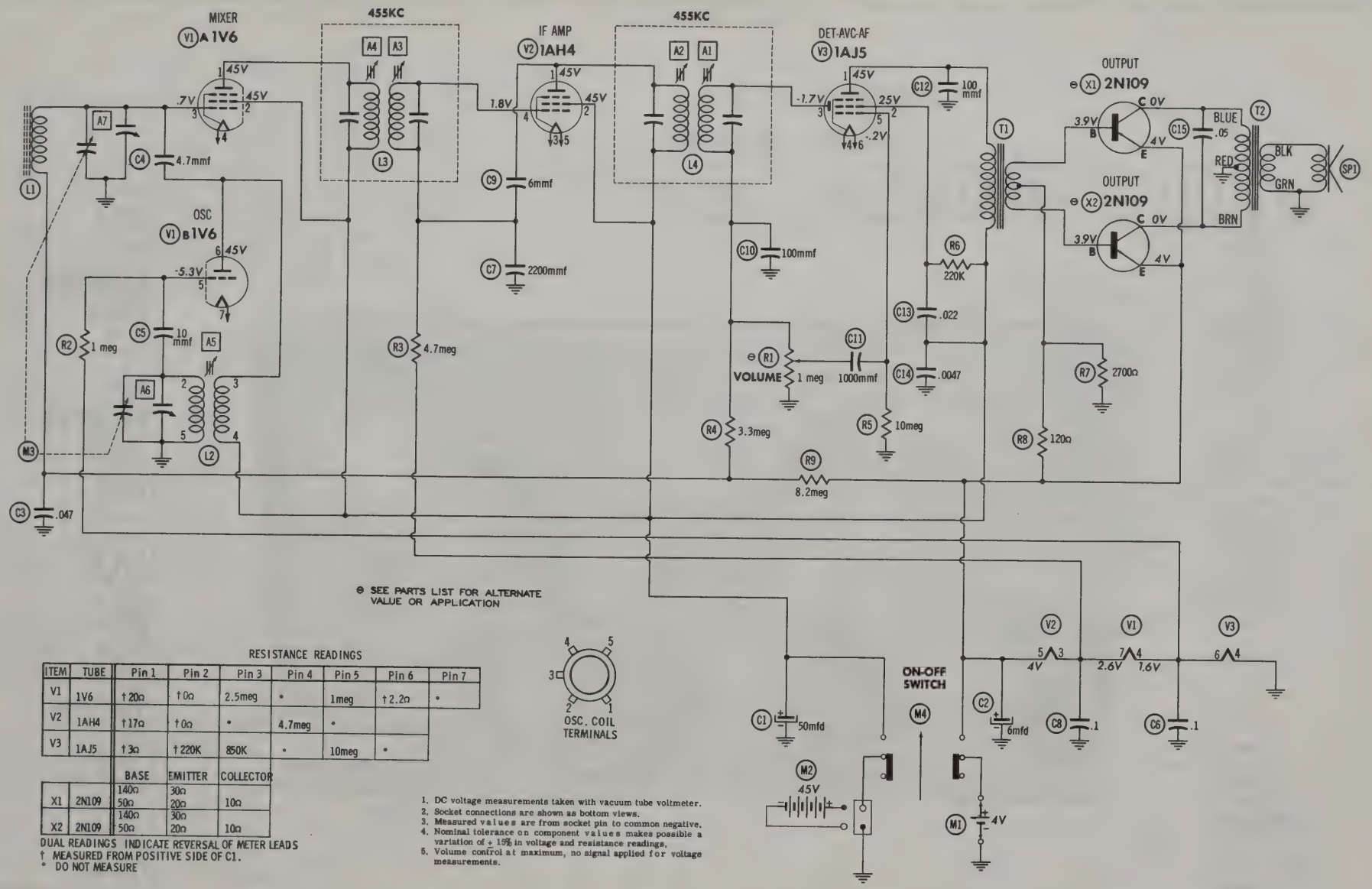
ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M3	Tuning Cap.	170164-1	2 Gang (14-230MMF., 17-115MMF.)
M4	Switch	170436-1	On-Off (DPST-Slide Type)
	Cover & Housing	170675-1	Model JM-8GN
	Cover & Housing	170675-2	Model JM-8WE
	Cover & Housing	170675-3	Model JM-8MN
	Cover & Housing	170675-4	Model JM-8BK
	Cover & Housing	170675-5	Model JM-8BN
	Cover & Housing	170675-6	Model JM-8BG
	Knob	170506-1	Tuning
	Knob	170505-1	Volume



CHASSIS TOP VIEW

CROSLEY
MODEL 7M-8BG (Ch. R102)

SET 334 FOLDER 4



⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	1V6	†20Ω	†0Ω	2.5meg	•	1meg	†2.2Ω	•
V2	1AH4	†17Ω	†0Ω	•	4.7meg	•		
V3	1AJ5	†3Ω	†220K	850K	•	10meg	•	

		BASE	EMITTER	COLLECTOR
X1	2N109	140Ω 50Ω	30Ω 20Ω	10Ω
X2	2N109	140Ω 50Ω	30Ω 20Ω	10Ω

DUAL READINGS INDICATE REVERSAL OF METER LEADS
† MEASURED FROM POSITIVE SIDE OF C1.
• DO NOT MEASURE

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

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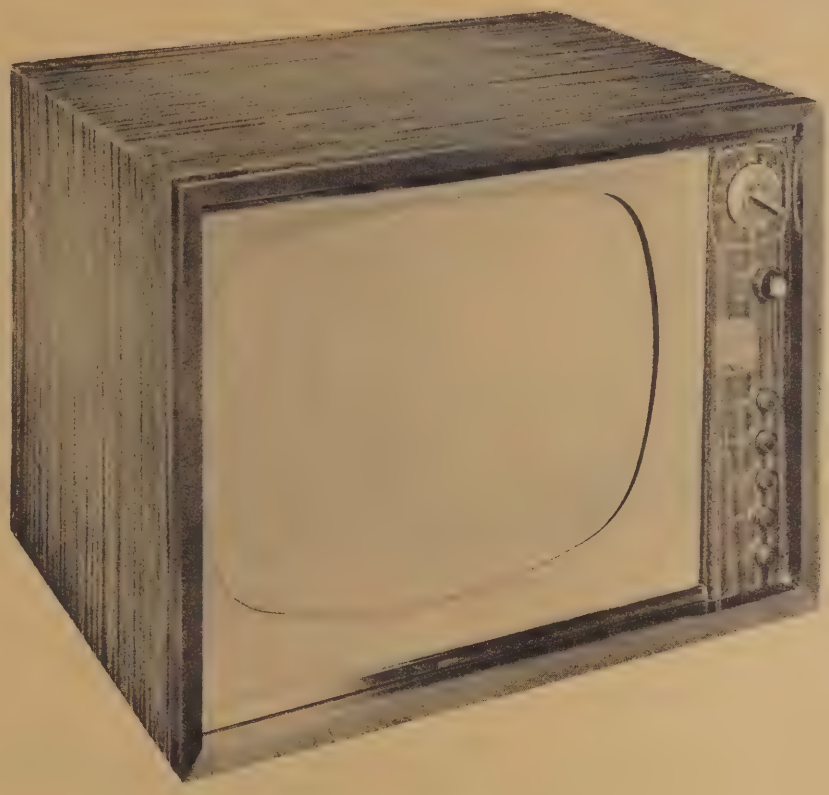

DUMONT MODEL "TRAVIS" (Ch. RA-356)

TRADE NAME	Dumont	MODELS	CHASSIS
		Cambridge, Colefax, Trainor, Travis.....	RA-356, RA-357
MANUFACTURER	Allen B. Dumont Laboratories, Inc., 257 Sixteenth Ave., Paterson, N.J.		
TYPE SET	Television Receiver		
TUBES	Nineteen		
POWER SUPPLY	110-120 Volts AC-60 Cycles	RATING 1.5 Amp. @ 117 Volts AC	
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

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DUMONT CHASSIS RA-356, RA-357

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 9 push-on type control knobs from front panel of cabinet.

2. Remove 6 wood screws. Remove rear cover.

3. Remove picture tube socket, speaker leads, HV lead, yoke plug and antenna plugs.

4. Remove 3 wood screws from bracket at the top rear of chassis, and 3 wood screws from bracket at the bottom rear of chassis.

5. Slide chassis from cabinet.

6. Remove 2 speaker nuts. Remove speaker.

MODEL	CHASSIS
"Travis"	RA-356

DUMONT CHASSIS RA-356, RA-357

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removing the channel selector and fine tuning knobs.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 5 wood screws holding metal molding at top edge of the safety glass. Remove molding and safety glass. Use extreme caution when removing safety glass.

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

SPECIAL ADJUSTMENTS

A. Picture Stabilizer Adjustment

Adjust the picture stabilizer (R4) for picture with stable sync. If adjusted too far clockwise picture will have unstable sync.

B. Dumonitor Control Adjustment

The dumonitor (AGC) control is properly adjusted at the factory and will normally not require readjustment. To adjust the AGC control to prevent overloading on very strong signals the following procedure should be used:

1. Set horizontal hold control for maximum straightness of vertical elements of test pattern or picture near the top of picture.
2. Adjust AGC control until overloading is eliminated.
3. Switch momentarily to another channel and back again.
4. If overloading reappears in step 3, readjust AGC control.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made from the rear panel of the chassis. Set the horizontal hold control to its mid-range position and adjust the horizontal stabilizer slug (B1) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary slug (A11) located on top of chassis.

FUSES

One fuse is used for LV power supply protection. (For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

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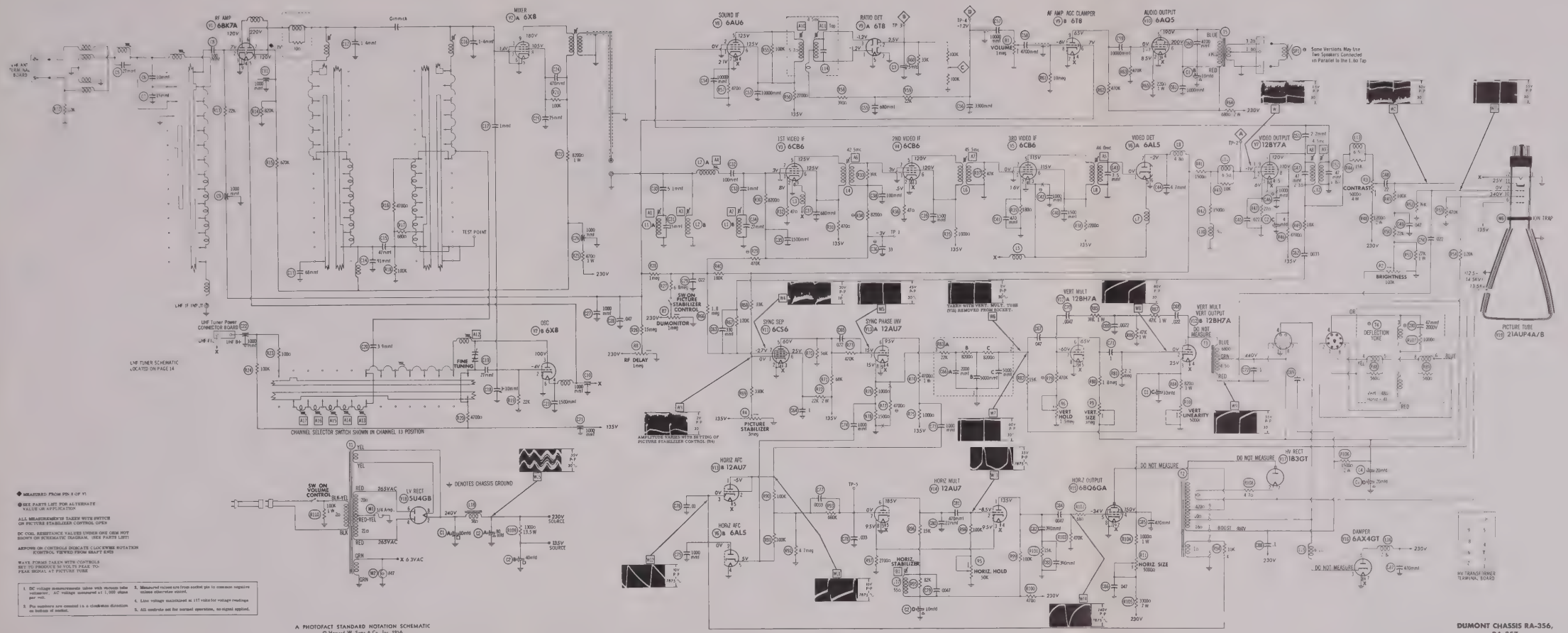
RF AMP V1 6BK7A
MIXER V7 A 6X8
SOUND IF V8 6AU6
RATIO DET V9 A 6T8
AF AMP AGC CLAMPER V9 B 6T8
AUDIO OUTPUT V10 6AQ5
1ST VIDEO IF V2 6CB6
2ND VIDEO IF V4 6CB6
3RD VIDEO IF V5 6CB6
VIDEO DET V6 A 6AL5
VIDEO OUTPUT V7 12BY7A
OSC V7 B 6X8
SYNC SEP V11 6CS6
SYNC PHASE INV V10 A 12AU7
VERT MULT V12 A 12BH7A
VERT MULT VERT OUTPUT V12 B 12BH7A
HORIZ AFC V10 B 12AU7
HORIZ AFC V6 B 6AL5
HORIZ MULT V10 12AU7
HORIZ OUTPUT V11 6BQ6GA
HV RECT V13 1B3GT
DAMPER V16 6AX4GT
LV RECT V10 5U4GB
PICTURE TUBE V13 21AUP4A/B
UHF Tuner Power CONNECTOR BOARD
UHF B+
UHF IF OUT
FINE TUNING
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
SW-ON PICTURE STABILIZER CONTROL
DUMONITOR
RF DELAY
PICTURE STABILIZER
SW-ON VOLUME CONTROL
VOLUME
CONTRAST
BRIGHTNESS
DEFLECTION YOKE
ION TRAP
HORIZ STABILIZER
HORIZ HOLD
HORIZ SIZE
VERT HOLD
VERT SIZE
VERT LINEARITY
TEST POINT
DENOTES CHASSIS GROUND
DO NOT MEASURE
Some Versions May Use Two Speakers Connected in Parallel to the 1.6Ω Tap
TAKEN WITH VERT. MULT. TUBE (V12A) REMOVED FROM SOCKET.
AMPLITUDE VARIES WITH SETTING OF PICTURE STABILIZER CONTROL (R84)
◆ MEASURED FROM PIN 8 OF V7.
● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
ALL MEASUREMENTS TAKEN WITH SWITCH ON PICTURE STABILIZER CONTROL OPEN
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM. SEE PARTS LIST.
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 94 VOLTS PEAK TO-PEAK SIGNAL AT PICTURE TUBE
1. DC voltage measurements taken with electronic type voltmeter. AC voltage measured at 1,000 cycles per sec.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings
5. All controls set for normal operation, no signal applied.
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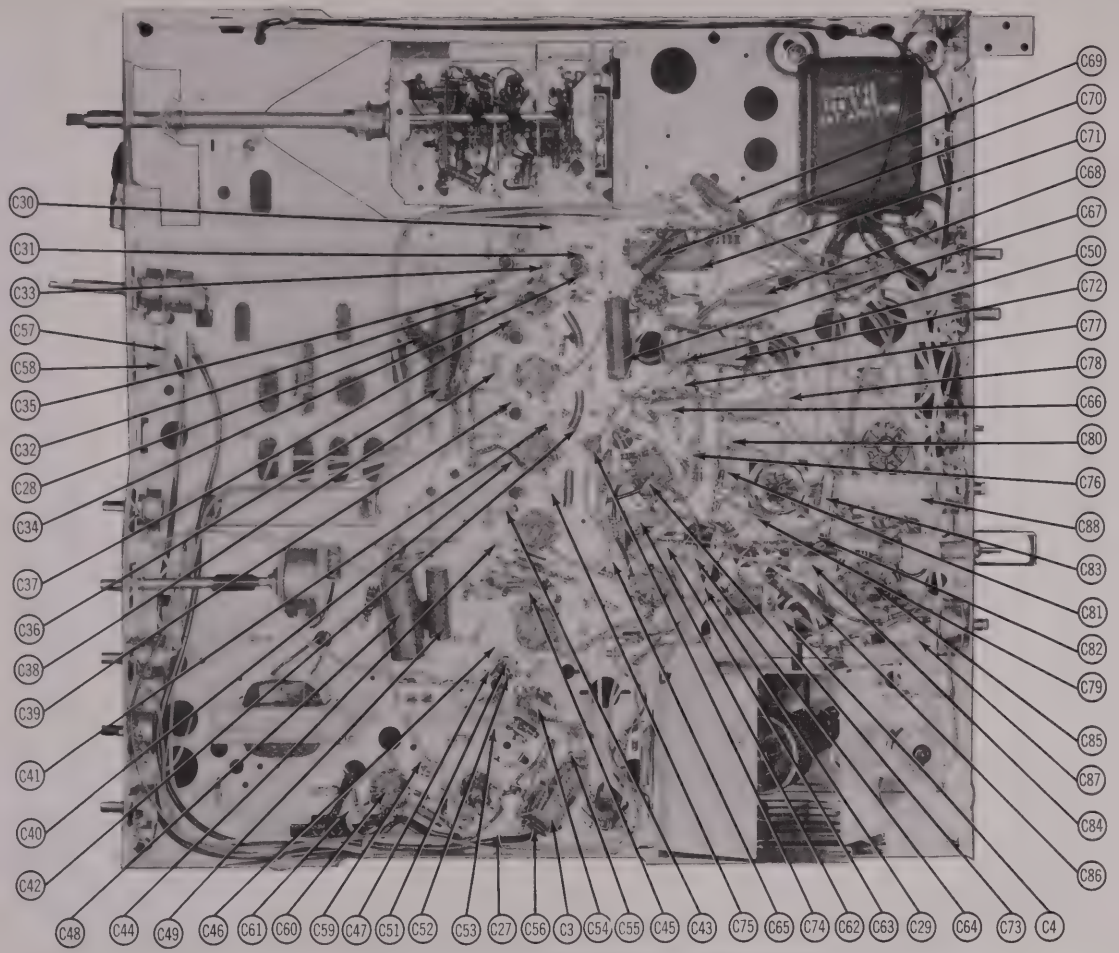
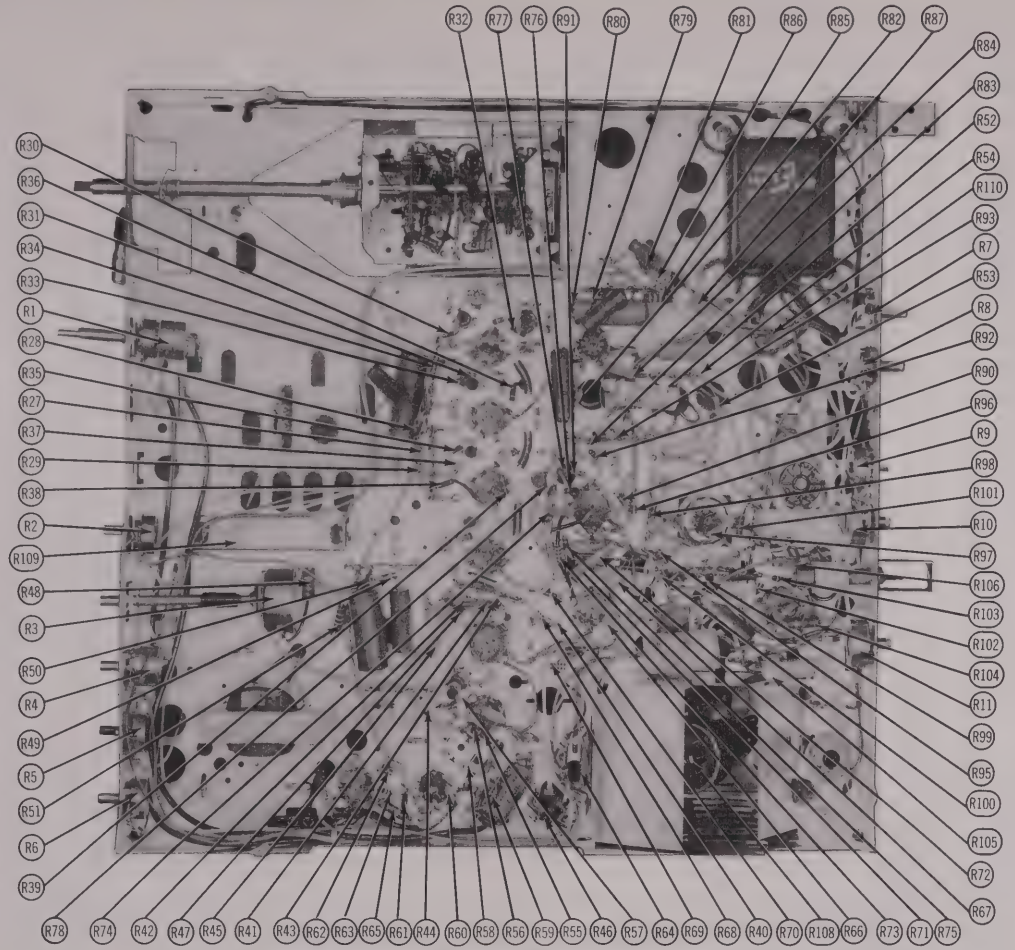
DUMONT CHASSIS RA-356, RA-357

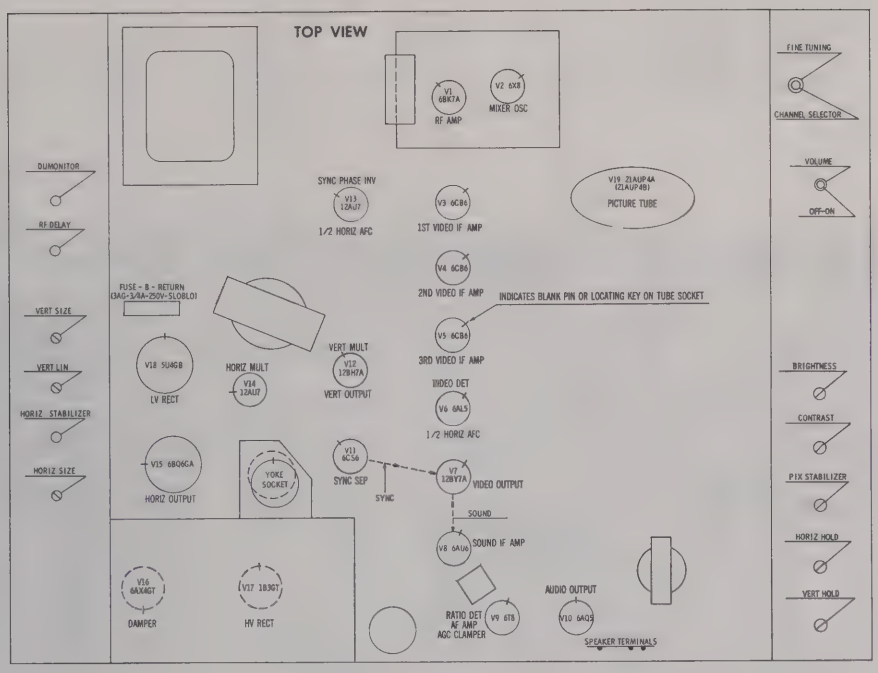


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

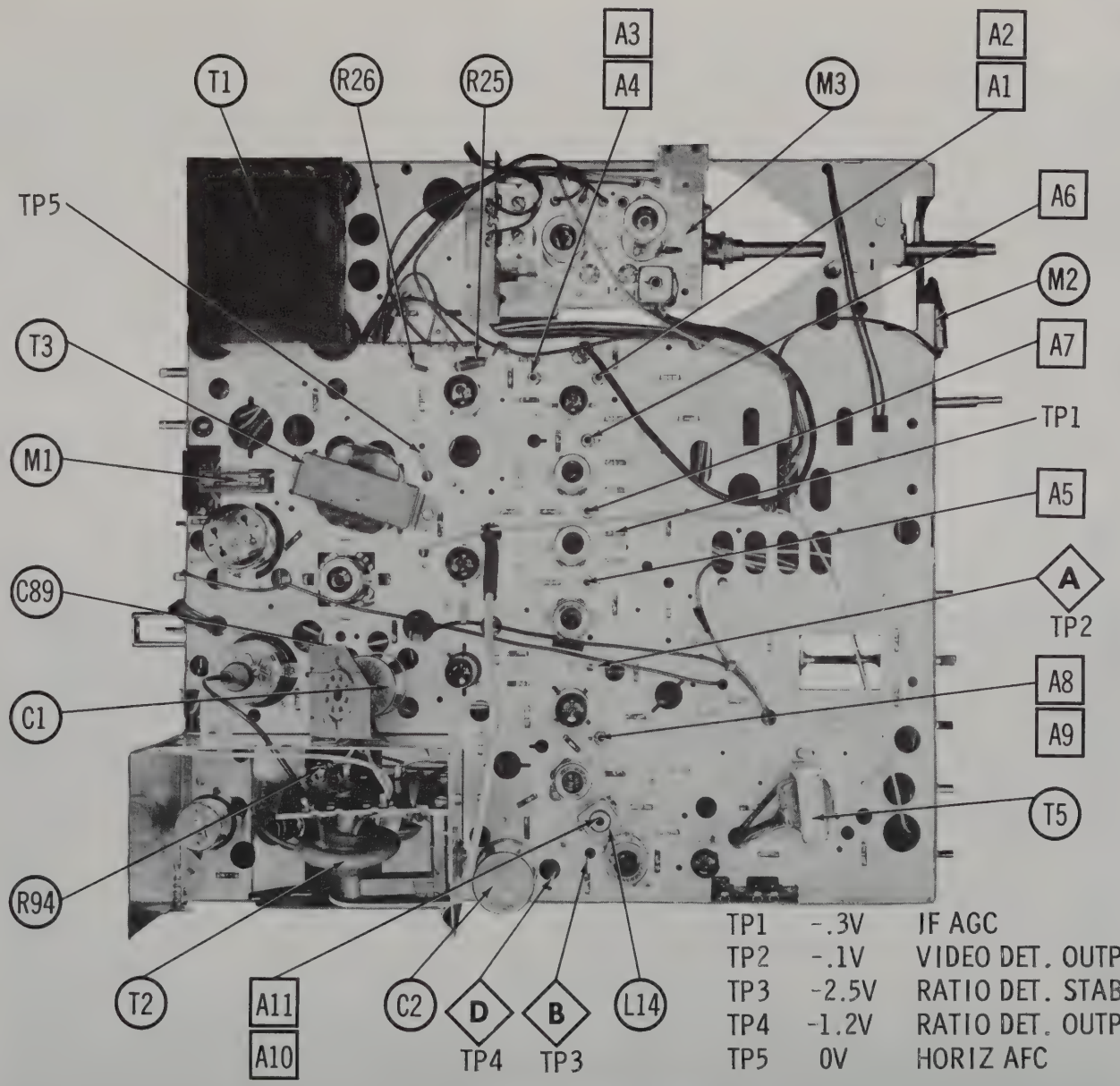
The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V18, Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6, V7
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V19
Has pic, no sound - V8, V9, V10
Overloaded picture - V9

SYNC FAILURE
No vert. sync - V12, V13
No horiz. sync - V6, V13, V14
No vert. or horiz. sync - V11, V13

SWEEP FAILURE
No raster, has sound - V14, V15, V16, V17, V19
No vertical deflection - V12
Poor vert. linearity or foldover - V12
Poor horiz. linearity or foldover - V14, V15, V16
Narrow picture - V14, V15, V16, V17, V18
Vert. off freq. - V12, V13
Horiz. off freq. - V6, V13, V14



TP1	-.3V	IF AGC
TP2	-.1V	VIDEO DET. OUTPUT
TP3	-2.5V	RATIO DET. STABILIZING
TP4	-1.2V	RATIO DET. OUTPUT
TP5	0V	HORIZ AFC

CHASSIS TOP VIEW

CHASSIS BOTTOM VIEW INDUCTOR IDENTIFICATION

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BK7A	INF	1Meg	0Ω	0Ω	.1Ω	†500Ω	330K	INF	0Ω
V2	6X8	0Ω	22K	†6000Ω	.1Ω	0Ω	0Ω	100K	†100K	†8700Ω
V3	6CB6	650K	47Ω	.1Ω	0Ω	†1800Ω	†1800Ω	0Ω		
V4	6CB6	650K	47Ω	.1Ω	0Ω	†2300Ω	†2300Ω	0Ω		
V5	6CB6	.1Ω	180Ω	.1Ω	0Ω	†3500Ω	†3500Ω	0Ω		
V6	6AL5	.1Ω	10K	.1Ω	0Ω	4.8Meg	0Ω	3000Ω		
V7	12BY7A	27Ω	1500Ω	0Ω	.1Ω	.1Ω	0Ω	†6200Ω	†6000Ω	0Ω
V8	6AU6	1.8Ω	0Ω	0Ω	.1Ω	†4000Ω	†4000Ω	470Ω		
V9	6T8	INF	33K	INF	.1Ω	0Ω	1Meg	0Ω	10Meg	†470K
V10	6AQ5	470K	220Ω	0Ω	.1Ω	†1000Ω	†700Ω	470K		
V11	6CS6	35K	0Ω	.1Ω	0Ω	†35K	†23K	1.8Meg		
V12	12BH7A	▪2100Ω	2.2Meg	●2300Ω	.1Ω	.1Ω	●▪2.5Meg	●950K	0Ω	0Ω
V13	12AU7	4.8Meg	4.8Meg	10K	.1Ω	.1Ω	†7000Ω	500K	1500Ω	0Ω
V14	12AU7	†100K	●100K	2700Ω	.1Ω	.1Ω	†16K	5Meg	2700Ω	0Ω
V15	6BQ6GA	TP	.1Ω	NC	●†7000Ω	470K	NC	0Ω	0Ω	TOP CAP ▪16Ω
V16	6AX4GT	NC	NC	400K	NC	†40Ω	NC	.1Ω	0Ω	
V17	1B3GT		PINS	1 - 8	HAVE	INFINITE	RESISTANCE			TOP CAP ▪430Ω
V18	5U4GB	NC	30K	NC	21Ω	NC	20Ω	NC	30K	
V19	21AUP4A	0Ω	39K	Pin 6 †1300Ω	Pin 10 ▪120K	Pin 11 †150K	Pin 12 .1Ω			

ALL MEASUREMENTS TAKEN WITH SWITCH ON PICTURE STABILIZER CONTROL OPEN.

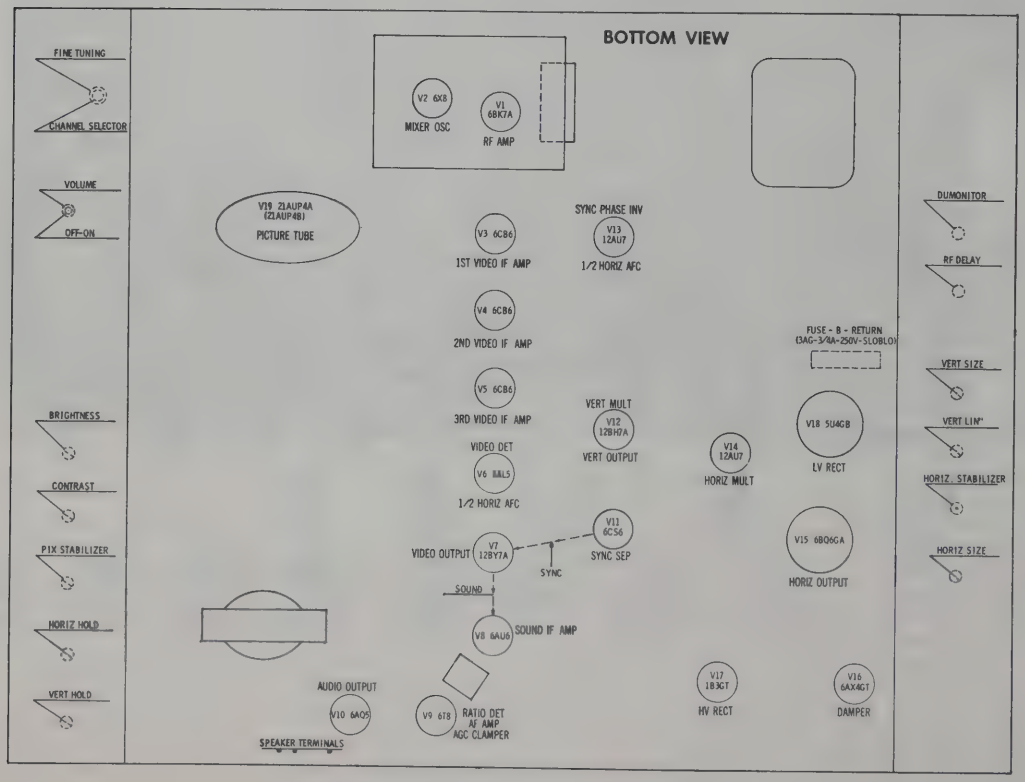
† MEASURED FROM PIN 2 OF V18.

▪ MEASURED FROM PIN 3 OF V16.

● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.

TP TIE POINT

NC NO CONNECTION



TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Remove the horizontal output tube (V15) and the damper tube (V16). Connect the yoke, speaker and picture tube during alignment.

VIDEO IF ALIGNMENT

Place the channel selector switch between any two channels. This will disable the local oscillator and reduce the possibility of erroneous indications. Wrap one end of a short length of wire around grid of converter tube V2.
Connect the high side of generator to the free end.
Attenuate signal generator output to maintain not more than 2 volts on VTVM.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to loose end of wire from grid of converter tube. Low side to chassis.	43.5MC (10MC Swp)	41.25MC 42.25MC 45.75MC 47.25MC	Between any two channels.	Vert. amp. thru detector (Fig. 1) to pin 5 (plate) of 6CB6 (V3). Low side to chassis.	A1, A2, A3, A4	Adjust for response curve similar to Fig. 2. Adjust A1 to place 41.25MC marker in trap notch. Adjust A2 to place 47.25MC in trap notch. Adjust A3 to place 42.25MC marker on low frequency side of curve. Adjust A4 to place 45.75MC at 70% on high frequency side of response curve.
2.	"	"	Not used.	44.0MC (unmod)	"	USE VTVM DC probe to point (A) Common to chassis.	A5	Adjust for maximum deflection.
3.	"	"	"	42.5MC	"	"	A6	"
4.	"	"	"	45.5MC	"	"	A7	"

4.5MC TRAP ALIGNMENT

Set contrast control for maximum contrast.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	Direct	High side to point (A). Low side to chassis.	Not used.	4.5MC (400~ Mod)	Any non-interfering channel.	Vert. amp. thru detector (Fig. 1) to pin 11 (cathode) of picture tube. Low side to chassis.	A8	Adjust for MINIMUM 400~ indication on scope.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp. to point (B). Low side to chassis.	A9, A10	Disconnect stabilizing capacitor (C3). Adjust for curve of maximum amplitude and symmetry similar to Fig. 3.
7.	"	"	"	"	"	Vert. amp. to point (D). Low side to chassis.	A11	Reconnect C3. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 4. SLIGHTLY retouch A10 for maximum amplitude and straightness of crossover lines.

SOUND IF ALIGNMENT USING TV SIGNAL AND VTVM

Disconnect test equipment. Connect antenna to VHF antenna terminals. Tune in a TV station and adjust for best picture.
Connect two matched 100KΩ (±5%) resistors in series from point (B) to chassis. The junction of these two resistors is alignment point (C) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	Not used.	Not used. Tune in a signal with audio.	Not used.	Strongest TV station signal available.	DC probe to point (C) Common to chassis.	A9, A10	Adjust for maximum deflection.
7.	"	"	"	"	DC probe to point (D) Common to point (C).	A11	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

VHF OSCILLATOR ALIGNMENT

Set the fine tuning control to the center of its range. Set the channel selector to the highest high band channel operating in the area. Adjust the high band oscillator adjustment (A12) for best picture detail. Check all other high band channels. If one fails to fall in range of the fine tuning, it may be necessary to compromise by retouching A12.
Set the channel selector to each low band channel operating in the area. Adjust the proper oscillator slug for each channel in turn for best picture detail. A13 is for channel 6, A17 for channel 5 etc. If a slug does not have sufficient range for a particular channel, it may be necessary to adjust the slug intended for the next higher channel.

VHF RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion of the receiver should not be required in the field.

ALIGNMENT FOR UHF PORTION OF TUNERS

In the event the UHF oscillator tube is replaced, it is recommended that several tubes be tried and the one which works best should be used. Alignment of the UHF tuner is not recommended in the field.

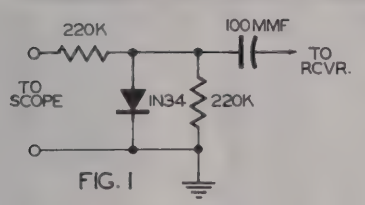


FIG. 1

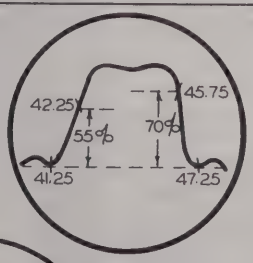


FIG. 2

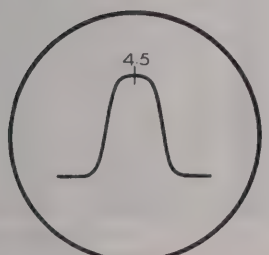


FIG. 3

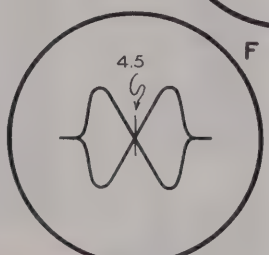
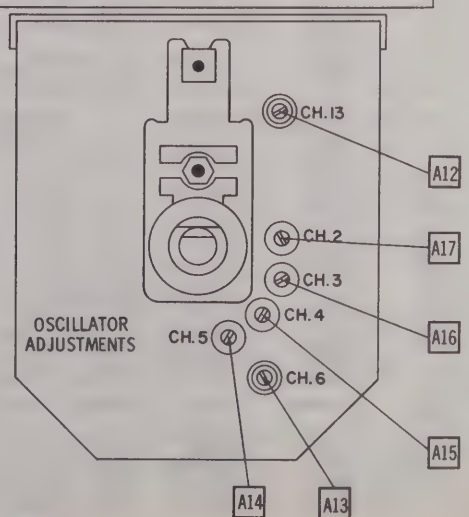


FIG. 4



TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	RF Amp.	6BK7A	
V2	Mixer-Osc.	6X8	
V3	1st Video IF Amp.	6CB6	
V4	2nd Video IF Amp.	6CB6	
V5	3rd Video IF Amp.	6CB6	
V6	Video Det., Horiz. AFC	6AL5	
V7	Video Output	12BY7A	
V8	Sound IF Amp.	6AU6	
V9	Ratio Det-AF Amp. - AGC Clamper	6T8	
V10	Audio Output	6AQ5	
V11	Sync Sep.	6C86	
V12	Vert. Mult.-Vert. Output	12BH7A	
V13	Sync Phase Inv. - Horiz. AFC	12AU7	
V14	Horiz. Osc.	12AU7	
V15	Horiz. Output	6BQ6GA	
V16	Damper	6AX4GT	
V17	HV Rectifier	1B3GT	
V18	LV Rectifier	5U4GB	

PICTURE TUBE

ITEM No	REPLACEMENT DATA: DUMONT PART No	CBS PART No	GENERAL ELECTRIC SYLVANIA PART No	NOTES
V19	21AUP4A, B ①	21AUP4A ② 21AUP4 ③	21AUP4A, B ① 21AUP4 ③	① Aluminized ② Silver Screen "80"

ELECTROLYTIC CAPACITORS

ITEM No	RATING: CAP.	VOLT	REPLACEMENT DATA: DUMONT PART No	ARROVOX PART No	CENTRALAB PART No	CORNELL DUBILIER PART No	PYRAMID PART No	SANGAMO PART No	SPRAGUE PART No
C1A	80	350	31351427	AFH4-07	D606	FP533 & TC32	TM628	Q-035	TVL-4680
B	40	350							
C	20	50							
D	120	350							
C3A	80	350	31351435	AFH4-08-80	CC38	FP385 & TC80	TMT-164 TD-4-450	Q-067 TM-4540	R3237*
B	40	350							
C	4	350							
D	10	350							
C9	5	100	31351363	PRS150Y4	BR415	TC40	TD-4-150	TM-1504	TVA-1403
C34	30	350	31351364	PRS450Y30	BR3035	TC60	TD-30-350	TM-4530	TVA-1603

* Non-cooling item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING: CAP.	VOLT	REPLACEMENT DATA: DUMONT PART No	ARROVOX PART No	CENTRALAB PART No	CORNELL DUBILIER PART No	ERIE PART No	MALLORY PART No	SPRAGUE PART No	NOTES
C5	27		31351500	DU-400X27	D6-270	D027	831-270	UC-5427	5GA-Q27	
C6	10		31351610	NT50-D10	NC-10	N018	N750A-100	NT-541	5TCU-Q1	
C7	15		31351230		TCZ-15		N330K-150			
C8	100		31370030							
C9	1000		31351043							
C10	1000		31351042							
C11	1000		31351042							
C12	1-4		31351491		839-4		3115-01-10	CT551		
C13	68		31351413							
C14	91		31351480							
C15	47		31351414	NT50-D147	TCN-47	N033	N330L-470	NT-5447	5TCU-Q47	
C16	1-4		31351672		839-4		3115-01-10	CT551		
C17	10		31351630	NPO-E11	TCZ-1	T203	NPOA-010		5TCCB-V1	
C18	5-10		31351782		839-10					
C19	27		31351500		TCN-27	N027	N750K-270			
C20	3.9		31351910							
C21	1000		31351043							
C22	1000		31351042							
C23	1500		31351710	BPD-0015	DD-152	K071	B01-0015		5HK-D15	
C24	470		31351560	BPD-00047	DD-471	K060	B01-471	UC-5347	5GA-T47	
C25	75		31351640	BPD-075	DD-750	K075	B01-750	UC-5475	5GA-Q75	
C26	1000		31351710	BPD-0015	DD-152	K071	B01-0015		5HK-D15	
C27	1000		31351700	BPD-001	DD-102	K069	B01-001	DC531	5HK-D1	
C28	.047	200	31351030	BPD-05	DF-503	CUB3247		PT4147	5TM-S47	
C29	.047	200	31351030	BPD-05	DF-503	CUB4823	B1T-03	PT4123	5TM-S23	
C30	5.1		31351800	NPO-D15		Z01	NPOA-050	Z7-555		
C31	15		31351730	NPO-D15	TCZ-15	Z015	NPOK-150		5TCC-Q15	
C32	100		31351900	NPO-E100	TCZ-100	T230	NPO-337-101	Z7-531	5TCC-T1	
C33	1		31351830	NPO-S1	TCZ-1	T203	NPOA-010		5TCCB-V1	
C34	27		31351530	NPO-E33	TCZ-27	Z027	NPOJ-270		5GA-Q27	
C35	1500		31351710	BPD-0015	DD-152	K071	B01-0015	DC5218	5HK-D15	
C36	33	200		P33BN-33						Note 1
C37	680		31351660	2S680	DE-681	TP50	811-681	UC-5368	5GA-T68	
C38	100		31351900	BPD-0001	DD-101	D042	B01-101	UC-531	5GA-T1	
C39	1500		31351710	BPD-0015	DD-152	K071	B01-0015	DC5218	5HK-D15	
C40	1500		31351710	BPD-0015	DD-152	K071	B01-0015	DC531	5HK-D15	
C41	470		31351640	5S470	DE-471	TP49	811-471	UC-5347	5GA-T47	
C42	1000		31351700	BPD-001	DD-102	K069	B01-001	DC531	5HK-D1	Note 3
C43	1-5		31351230							
C44	4.7		31351750	NPO-D14.7	TCZ-4R7	Z010				
C45	.022	200	31351040	BPD-02	DF-303	CUB4823				
C46	1000			BPD-001	DD-102	K069				Note 3
C47	47		31351550							
C48	.68	400	31351140	P68BN-32			CUB4P32		PT4032	5TM-P32
C49	.047	400	31351050	BPD-05	DF-503	CUB4847		PT4147	5TM-S47	
C50	.022	600	31351460	BPD-03	DF-303	CUB6823	B1T-03		PT6123	5TM-S23
C51	2.2		31351490	NPO-E2.2	TCZ-2R2	T205	NPOA-220		5TCCB-V22	
C52	47		31351550							
C53	10000		31351630	BPD-01	DD-103	K082	B1-01	DC531	5HK-E1	
C54	10000		31351630	BPD-01	DD-103	K082	B1-01	DC531	5HK-E1	
C55	680		31351890	2S680	DE-681	TP50	811-681	UC-5368	5GA-T68	
C56	3300		31351730	BPD-0033	DD-332	K077	B1-033	UC-5233	5HK-D33	
C57	10000		31351630	BPD-01	DD-103	K082	B1-01	DC531	5HK-E1	
C58	4700		31351740	BPD-0047	DD-472	K079	B1-047	UC-5347	5HK-D47	
C59	10000		31351630	BPD-01	DD-103	K082	B1-01	DC531	5HK-E1	
C60	.047		31351740	BPD-0047	DD-473	K079	B1-047	UC-5347	5HK-D47	
C61	1000		31351700	BPD-001	DD-102	K069	B01-001	DC531	5HK-D1	
C62	.047	400	31351030	BPD-0033	DF-503	CUB4833	B1T-03	PT4133	5TM-S33	
C63	330		31351830	BPD-00033	DD-331	Q056		UC-5331	5HK-S33	
C64	.1	400	31351230	P48BN-1	DF-104	CUB4P1		PT401	5TM-P1	
C65	.022	100	31351030	BPD-03	DF-303	CUB4822	B1T-03	PT4123	5TM-S23	
C66A	2000									
B	5000		† 88000831	† PA-U0	† PC-100	† 1ST M1	† 1401-01		† Y-1	
C	5000									
C67	.047	600	31351500	BPD-05	DF-503	CUB6847		PT4147	5TM-S47	
C68	.023	600	31351780	BPD-02	DF-303	CUB6823	B1T-03	PT6123	5TM-S23	
C69	.0023	600	31351690	BPD-0023	DF-232	CUB6D23	GP3-333-223	PT6223	5TM-D23	
C70	.0047	600	31351690	BPD-0047	DF-473	CUB6D47	GP3-333-473	PT6247	5TM-D47	
C71	.1	600	31351830	P68BN-1	DF-104	CUB6P1		PT601	5TM-P1	
C72	.1	300	31351690	P68BN-1	DF-104	CUB3P1		PT401	5TM-P1	

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont)

ITEM No	RATING: CAP	VOLT	REPLACEMENT DATA: DUMONT PART No	ARROVOX PART No	CENTRALAB PART No	CORNELL DUBILIER PART No	ERIE PART No	MALLORY PART No	SPRAGUE PART No	NOTES
C73	1000		31351800	DI-001	DD-102	G069	811-102	MCB255	5GA-D1	
C74	1000		31351800	DI-001	DD-102	G069	811-102	MCB255	5GA-D1	
C75	1000		31353800	DI-001	DD-102	G069	811-102	MCB255	5GA-D1	
C76	01	200	31351630	BPD-01	DD-103	CUB4S1	GP5-333-103	PT401	4TM-S1	
C77	0033	400	31351030	BPD-0033	DE-332	CUB6D33	GP3-333-332	PT6133	5HK-D33	
C78	033	200	31351030	BPD-03	DF-503	CUB6833		PT6133	4TM-S33	
C79	.0047	400	31351683		1464-0047				MS-247	
C80	22		31353020		NT50-D122	TCN-22	N034	N750K-220	5TCU-Q22	
C81	470		31351130		1464-00047	D6-472	5RS747	811-471	MS-347	
C82	390	500	31351500			D6-391	5RS739	811-391	MS-339	
C83	390	500	31351500			D6-391	5RS739	811-391	MS-339	
C84	.0047	400	31351040	BPD-0047	DD-472	CUB4D47	GP3-333-472	PT6247	6TM-D47	
C85	470		31351940		S1470	D4-471	E080	UC-5347	5GA-T47	
C86	.047	400	31351030	BPD-05	DF-503	CUB4847	B1T-03	PT4147	5TM-S47	
C87	470		31351850	BPD-00047	DD-471	K080		UC-5347	5GA-T47	
C88	1	600	31351640	P48BP-1	DF-104	CUB4P1		PT601	5TM-P1	
C89	1	200	31351030	P38BN-1	DF-104	CUB3P1		PT401	2TM-P1	
C90	47	1000		HVD-10-47	DD30-470	V4Q47	3KV-470	DC30447	30GA-Q47	Note 3

† Items C66A, C66B, C66C, R53A, R53B and R53C are combined in one unit.
Note 1: Some versions may use .15MFD unit (part #6314037) in this application.
Note 2: Not used in some versions.
Note 3: Some versions may use 01MFM unit (part #6315401) in this application.

CONTROLS

ITEM No	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: DUMONT PART No	CENTRALAB PART No	CLAROSTAT PART No	IRC PART No.	MALLORY PART No	INSTALLATION NOTES
R1	1Meg	½	01070101					Volume & Switch
R2A	100K	½	01070123	B-40	A47-100K-S	QU-138	TA15L	Brightness
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R2A
R3A	5000Ω	4	01070091	SVP-999	A10-5000		M5M5PE	Contrast
B	Shaft		Not Req.	Not Req.	FS-3		Not Req.	Attach to R3A
R4A	3Meg	½	01070111	B-87-S	A47-3Meg-S	QU-140	U59	Picture Stabilizer
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R4A
C	Switch		Not Req.	Not Req.	SWE-15	T6-1	12S-28	Attach to R4A
R5A	50K	½	01070131	B-51	A47-50K-S	QU-133	TA54L	Horiz. Hold
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R5A
R6A	1.5Meg	½	01070123	AB-745	A47-1.5Meg-S	QU-138	TA15L	Vert. Hold
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R6A
R7A	1Meg	½	01056035	AB-89	A47-1Meg-S	QU-137	TA16L	Damper
B	Shaft		Not Req.	Not Req.	AK-4	Not Req.	Not Req.	Attach to R7A
R8A	1Meg	½	01056035	AB-89	A47-1Meg-S	QU-137	TA16L	RF Delay
B	Shaft		Not Req.	Not Req.	AK-4	Not Req.	Not Req.	Attach to R8A
R9A	3Meg	½	01056041	BX-84	A47-3Meg-S	QU-140	TA36L	Vert. Size
B	Shaft		Not Req.	Not Req.	AK-4	Not Req.	Not Req.	Attach to R9A
R10A	5000Ω	½	01056808	AB-10	A47-5000-S	QU-114	U14	Vert. Linearity
B	Shaft		Not Req.	Not Req.	AK-1	Not Req.	Not Req.	Attach to R10A
R11A	5000Ω	½	01056805	AB-10	A47-5000-S	QU-114	U14	Horiz. Size
B	Shaft		Not Req.	Not Req.	AK-1	Not Req.	Not Req.	Attach to R11A

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING: OHMS	WATT	REPLACEMENT DATA: DUMONT PART No.	IRC PART No.	NOTES
R12	10K		02351690	BTS-10K	
R13	32K		02351830	BTS-32K	
R14	850K 9%		02351180	BTS-850K 9%	
R15	450K 9%		02351150	BTS-450K 9%	
R16	4700Ω		02351650	BTS-4700	
R17	560Ω		02351750	BTS-560	
R18	100K		02351610	BTS-100K	
R19	22K		02041930	BTS-22K	
R20	4700Ω		02351650	BTS-4700	
R21	100K		02023010	BTS-100K	
R22	330Ω	1	02354680	BTA-330	
R23	100Ω		02023280	BTS-100	
R24	100K		02023010	BTS-100K	
R25	4700		02035400	BTA-470	
R26	15Meg		02023270	BTS-15Meg	
R27	0.5Meg		02023230	BTS-.5Meg	
R28	1Meg		02023130	BTS-1Meg	
R29	470K			BTS-470K	Note 1
R30	2200		02031880	BTS-2200	
R31	470Ω		02032480	BTS-470	
R32	47Ω		02035401	BTS-47	
R33	39K		02031940	BTS-39K	
R34	8200Ω		02036920		Note 2
R35	1000Ω		02031770	BTS-1000	
R36	470		02035401	BTS-47	
R37	47K		02036970	BTS-47K	
R38	2200Ω		02031810	BTS-2200	
R39	180Ω		02031810	BTS-180	
R40	180K 5%		02031030	BTS-180K 5%	
R41	15000 5%		02031030	BTS-1500 5%	
R42	15000 5%		02030530	BTS-1500 5%	
R43	10K		02031690	BTS-10K	
R44	15K		02031650	BTS-15K	
R45	18K		02031930	BTS-18K	
R46	4700Ω		02031650	BTS-4700	
R47	27Ω		02031580	BTS-27	
R48	1200Ω	2	02031790	BTS-1200	
R49	100K		02032540	BTS-100K	
R50	22K		02031930	BTS-22K	
R51	27K	1	02354940	BTA-27K	
R52	39K		02031960	BTS-39K	
R53	470K		02030290	BTS-470K	
R54	130K		02032020	BTS-130K	
R55	100K		02031610	BTS-100K	
R56	2700Ω		02031830	BTS-2700	
R57	470Ω		02032400	BTS-470	
R58	39KΩ		02031720	BTS-390	
R59	22K		02041930	BTS-22K	
R60	33K		02031950	BTS-33K	
R61	10Meg		02032680	BTS-10Meg	
R62	470K		02032540	BTS-470K	

ITEM No.	RATING: OHMS	WATT	REPLACEMENT DATA: DUMONT PART No.	IRC PART No.	NOTES
R63	470K		02031540	BTS-470K	
R64	680Ω	2	02035640	BTS-680	
R65	220Ω	1	02034690	BTA-220	
R66	1.8Meg	½ 5%	02032660	BTS-1.8Meg	
R67	130K		02032020	BTS-120K	
R68	33K		02031950	BTS-33K	
R69	330K		02032070	BTS-330K	
R70	56K		02031880	BTS-56K	
R71	68K		02031940	BTS-68K	
R72	22Ω	2	02031700	BTS-22	
R73	470K		02032090	BTS-470K	
R74	4700Ω	1	02034680	BTA-4700	
R75	1000Ω		02031770	BTS-1000	
R76	1000Ω		02031770	BTS-1000	
R77	4700Ω			BTS-4700	Note 3
R78	1500Ω		02031750	BTS-1500	
R79	470K		02031540	BTS-470K	
R80	1.8Meg		02032660	BTS-1.8Meg	
R81	2.2Meg		02032620	BTS-2.2Meg	
R82	15K 5%		02030760	BTS-15K 5%	
R83A	22K			BTS-22K	
B	8200Ω		88000831	BTS-8200	
C	820Ω			BTS-820	
R84	820Ω	1	02034760	BTA-820	
R85	39K	1	02034690	BTA-39K	
R86	47K	1	02034970	BTA-47K	
R87	47K	1	02034970	BTA-47K	
R88	680Ω		02032760		
R89	56Ω		02032740		
R90	100K		02032010		
R91	100K		02032010		
R92	4.7Meg		02032320		
R93	680K		02032210	BTS-680K	
R94	10K		02031690		
R95	82K		02032000		
R96	15K 5%		02030760		
R97	2700Ω 5%		02030580	BTS-2700 5%	
R98	100K		02032010		
R99	100K 5%		02030690	BTS-100K 5%	
R100	470Ω		02032400	BTS-470	
R101	15Ω		02032660		
R102	68Ω		02032350		
R103	470K		02032090		
R104	1000Ω	1	02034770		
R105	2200Ω	7	02312350	2W7-2200	
R106	1500Ω	2	02031790	BTS-1500	
R107	1000Ω				
R108	4.7Ω		02040810	BW½-4.7	
R109	1300Ω	13.5	02255202	2D-1250	
R110	100Ω	1	02045002	BTA-100R	

† Items R83A, R83B, R83C, C66A, C66B and C66C are combined in one unit.
Note 1: Some versions use a 1Meg resistor in this application.
Note 2: Some versions use a 15K resistor in this application.
Note 3: Not used in some versions.

TRANSFORMER (POWER)

ITEM No	RATING: PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA: DUMONT PART No	Halldorson PART No	Merit PART No	Stancor PART No	Thordarson PART No	Triad PART No
T1	117VAC @ 1.5A	525VCT @ 250A	5V @ 3A	6.3V @ 5A	30001642		P-28350 ③		26R33 ①④	R-51BU ① ③

① Parallel and phase 6.3V, 6A windings.
② Parallel and phase 6.3V, 8A windings.
③ Tape 5V, 3A winding.
④ Tape 6.3V, 1.2A winding.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	REPLACEMENT DATA: DUMONT PART No	Halldorson PART No	Merit PART No	RCA TYPE No	Ram PART No	Stancor PART No	Thordarson PART No	Triad PART No
T2	Horiz. Output Trans.	20002281	FB410F1	RVO-30F1	2321F1	X09F1	A-8254F1	F1LY-30F1	D-35F1
T3	Vert. Output Trans.	20005322	21808	A-3059	2287L1	A-8161	26B54	A-104X	
T4A	Yoke-Horiz. (26M1)	21013201	DF50F5 ①	MDF-75 ①	2322D5 ①	TY70F15 ①	DY-15A ①	Y-16 ①	Y-19-1 ①
B	Vert. (26M1)	89013574 ② 29000771 ③			②	②		②	

① Drill new mounting holes.
② Alternate Dumont part number.
③ Take rear cover and centering device.
④ Use original rear cover and centering device.
⑤ Connect horiz. damping network across terms #3 and #7.
⑥ Use original horiz. damping network if necessary.
‡ This part may be superceded by Parts Manufacturer's introduction of special unit for this application.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
9	9	9	10	9	5	3	10
2	5	5	9	5	4	Jumper 2 & 10	Jumper 9 & 7
1	6	6	3	1	3	4	3
7	6	6	2	2	3	AFC Winding 2	2
5	2	2	6	6	1	AFC Winding 1	1
Special Note ①						①	

① If the picture is out of phase, reverse AFC winding.

TRANSFORMER (AUDIO OUTPUT)

ITEM No	IMPEDANCE: PRI.	SEC.	REPLACEMENT DATA: DUMONT PART No	Halldorson PART No	Merit PART No	Stancor PART No	Thordarson PART No	Triad PART No	NOTES
T5	6.3K	3.5Ω tap @ 1.6Ω	20009792	Z1000	A-2900	A-3850	24S80	S-91X	

SPEAKER

ITEM No	RATINGS: SIZE	FIELD	V. C. IMP	REPLACEMENT DATA: DUMONT PART No	QUAM PART No	RCA TYPE No	NOTES
SP1	4"	PM	3-4Ω	18005792 ①	4A07	22S81	① Used in Model Travis
	5"	PM		18003706 ②			② Used in Model Tourist
	6"	PM		18003731 ③			③ Used in Model Colefax
	8"	PM		18003783 ④ 18003783 ⑤			④ Used in Model Cambridge

COILS (RF-IF)

ITEM No	USE	DC RES: PRI.	SEC.	REPLACEMENT DATA: DUMONT PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1A	#1 .25MC Trap	.1Ω		21013773				
B	#7 .25MC Trap	.1Ω						
L2	1st Video IF	.1Ω		20009853				Tapped
L3	1st Video IF	.1Ω	.1Ω	20001783	18-1001		4804	1.8 Microhenries
L4	2nd Video IF	.1Ω		20008995	17-4532	TV-130	6319	
L5	2nd Video IF	.1Ω	.1Ω	20001783	18-1001		4804	1.8 Microhenries
L6	3rd Video IF	.1Ω		20008995	17-4532	TV-130	6319	
L7	3rd Video IF	.1Ω	.1Ω	20001783	18-1001		4804	1.8 Microhenries
L8	4th Video IF	.1Ω	.1Ω	20008995	17-4532	TV-130	6319	
L9	Series Peaking Coil	4.5Ω		21013461	19-5032		6133	33 Microhenries
L10	Shunt Peaking Coil	9Ω		21014384	19-3180		6130	150 Microhenries
L11	Series Peaking Coil	6.5Ω		21014381	19-3190		6131	105 Microhenries
L12A	4.5MC Trap	2.1Ω		21013971				
B	Sound IF	1.8Ω						
L13	Series Peaking Coil	4.5Ω		21014381	19-3190		6131	105 Microhenries
L14	Ratio Det.	5Ω TO 6Ω	SOCT	20009043	17-5407*	TV-135*	6360*	Tertiary winding = 6Ω
L15	RF Choke	8.1Ω		21006550	18-1005		6803	8.2 Microhenries, IRC part #CL-L
L16	RF Choke	2.8Ω		21006530	18-1003		6804	4.7 Microhenries, IRC part #CL-L

* Use adaptor plate.

TRANSFORMER (HORIZ. OSC.)

ITEM No	DC RES: PRI.	SEC.	REPLACEMENT DATA: DUMONT PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No.	Ram PART No.	Thordarson PART No.	NOTES
L17	55Ω		21010893	19-1576	TV-163	6330		H9-5		

FILTER CHOKE

ITEM No	RATINGS: TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT (DC VOLTS)	REPLACEMENT DATA: DUMONT PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L18	250A	38Ω	1. 5HY	21010956	C3057	C-3998	C-8233	26C44 ①	C-47X

① Drill one new mounting hole.

PARTS LIST AND DESCRIPTIONS (Continued)

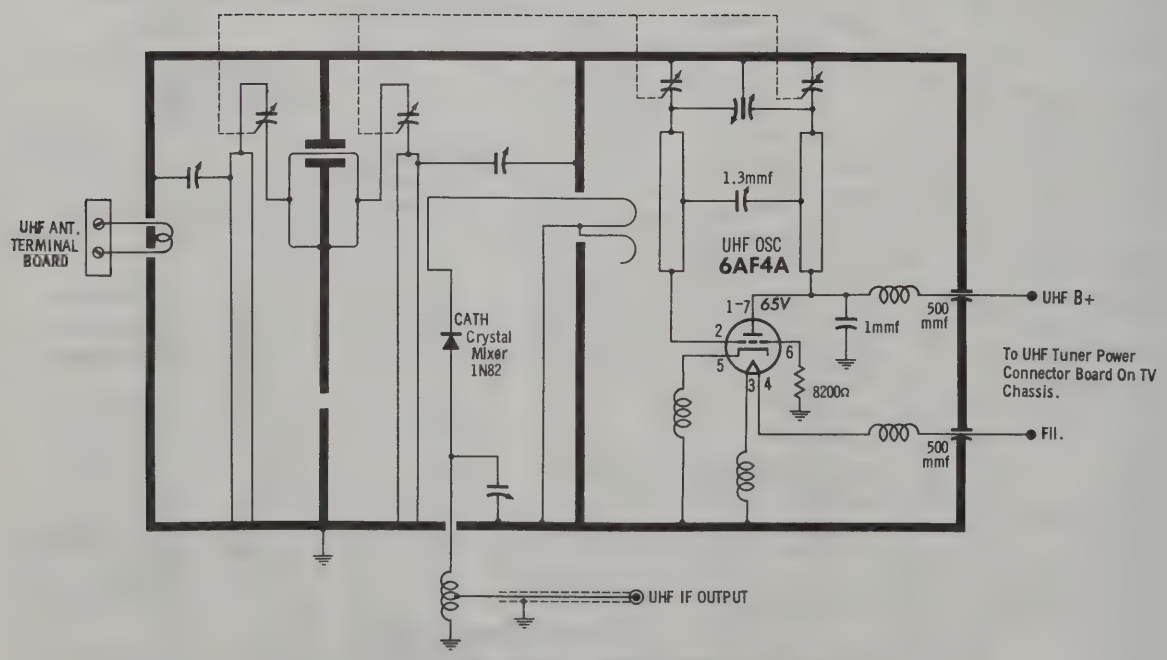
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			DUMONT PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG S/B	3/4A 250V	11005230	13110001	313.750 (3AG-S/B-3/4A)	357001	MDL 3/4	4405

MISCELLANEOUS

ITEM No.	PART NAME	DUMONT PART No.	NOTES
M2	Dial Light	12001310	#47
M3	Tuner	89013871*	VHF - Chassis RA-356, RA-357.
M4	Tuner	89013771	UHF - Chassis RA-357 only.
M5	Centering Device	29000771	Includes Deflection Yoke (T4) Rear Cover.
M6	Ion Trap	29000831	
	Knob	45006453	Channel Selector
	Knob	45006461	Fine Tuning - Chassis RA-356.
	Knob	45006463	Fine Tuning - Chassis RA-357.
	Knob	45006533	On-Off (Blonde)
	Knob	45006534	On-Off (Mahogany)
	Knob	45006541	Volume (Mahogany)
	Knob	45006542	Volume (Blonde)
	Knob	45006745	Front (Secondary Controls - 5 Used) Trainor & Cambridge Models.
	Knob	45006746	Front (Secondary Controls - 5 Used) Mahogany - Travis & Colefax Models.
	Knob	45006748	Front (Secondary Controls - 5 Used) Blonde - Travis & Colefax Models.
	UHF Dial	45006471	Chassis RA-357.
	Safety Glass	45006732	
	Mask	64011852	

* Alternate part #89013555.



UHF Tuner Part No. 89U13771 Used With Chassis RA-357

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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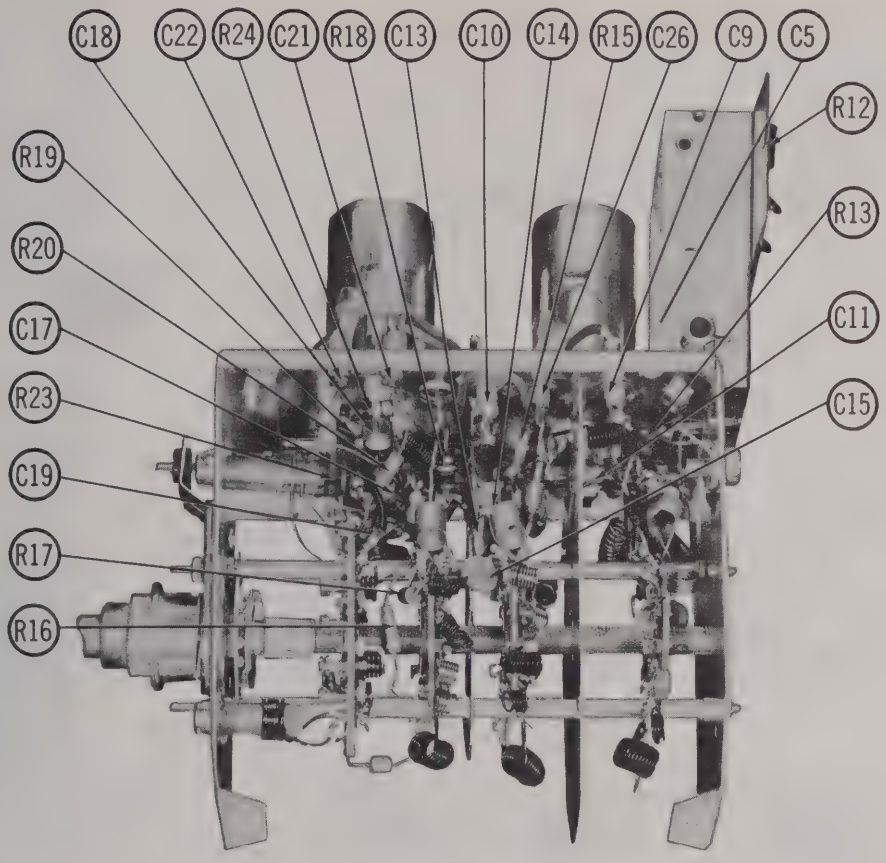
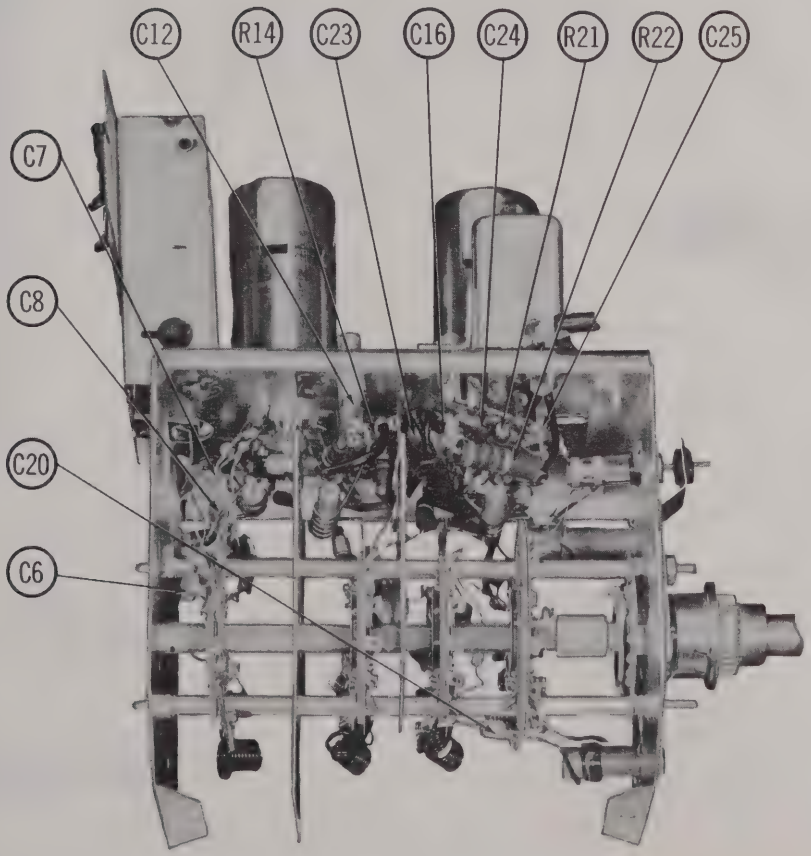
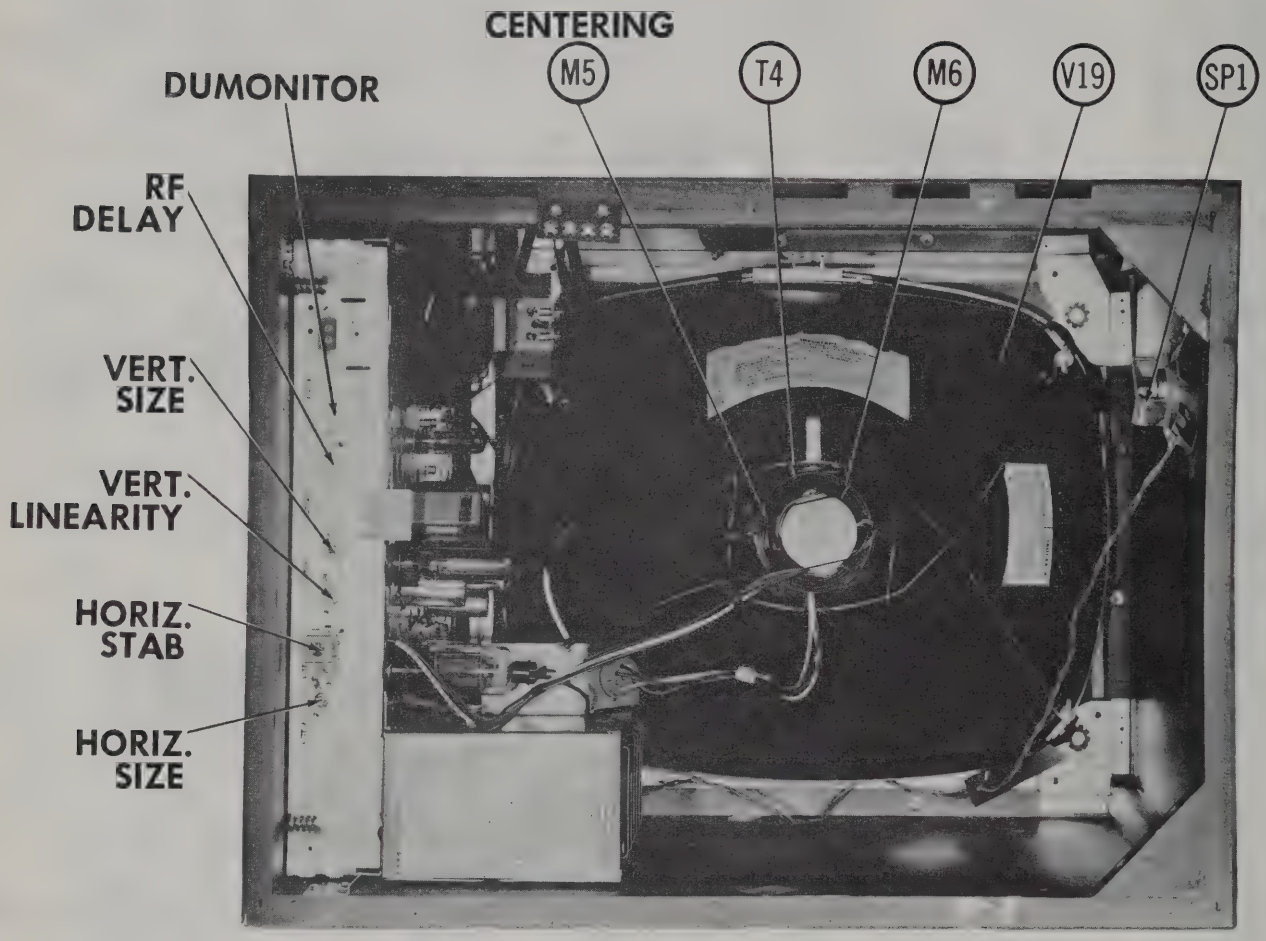
UHF TUNER SCHEMATIC



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET—REAR VIEW

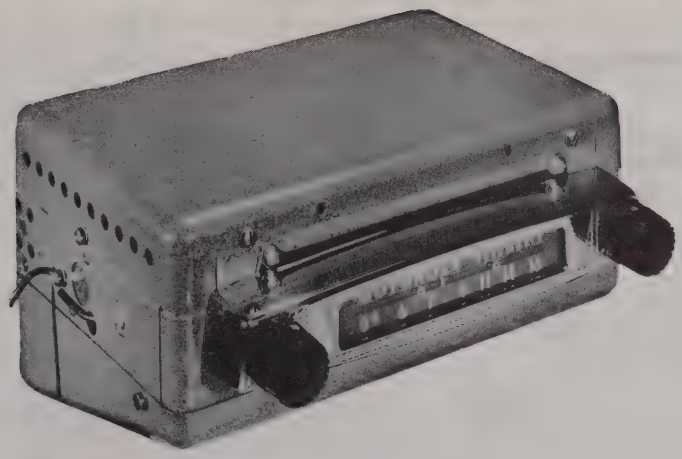
HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune in a TV station, preferably a test pattern.

Set the horizontal hold control at its mid-range position.

Adjust the horizontal stabilizer slug (B1) to the center of its effective synchronizing range, then momentarily remove signal by switching off channel and back again. Picture should pull in sync. If it does not readjust B1 until picture pulls into sync.

Adjust the horizontal size control (R11) for a picture slightly wider than necessary to fill the picture mask horizontally.



MOTOROLA
MODELS 396, 396-12

TRADE NAME	Motorola Models 396, 396-12
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Illinois
TYPE SET	Battery Operated Universal Type AM Superheterodyne Automobile Receiver
TUBES (Six)	Types 12BD6 RF Amplifier, 12BE6 Converter, 12BD6 IF Amplifier, 12CR6 Det.-AVC-AF Amp., 12AB5 Output, 12X4 Rectifier (6 volt equivalents used in Model 396)
POWER SUPPLY	12 Volt Storage Battery (Model 396-12) RATING 2.6 Amp. @ 12.6 Volts DC (Model 396-12)
TUNING RANGE—BROADCAST	540KC - 1600KC 5.2 Amp. @ 6.3 Volts DC (Model 396)

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V2). Low side to chassis.	455KC (400~Mod)	High freq. end stop	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	Fig. 1	Thru dummy to antenna receptacle	1610KC	"	"	A5, A6, A7	"
*3.	"	"	"	"	"	"	Using alignment tool (Fig. 2) back A8, A9 and A10 (tuning cores) out of coils, but not out of coil forms. Adjust A5, A6 and A7 for maximum output.
*4.	"	"	1400KC	Adjust 13/64" from high freq. end stop.	"	A8, A9, A10	Using alignment tool (Fig. 2) adjust A8, A9 and A10 for maximum output.
*5.	"	"	1610KC	High freq. end stop.	"	A5, A6, A7	Retouch for maximum output.
6.	With radio installed in car and antenna fully extended, tune in a weak station near 1400KC, adjust A7 for maximum volume.						

POINTER ADJUSTMENT

Set tuner to extreme low end of dial and set pointer to calibration mark on top left end of dial back plate.

* Not necessary, except in case of tampering or replacement of tuning cores or components.

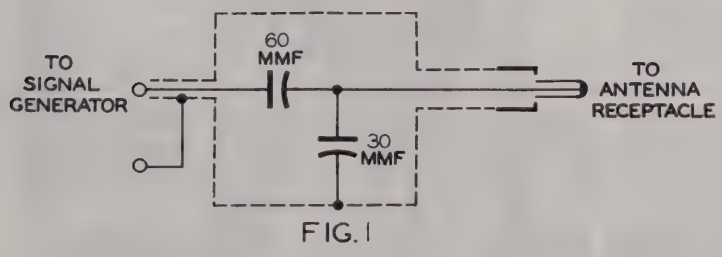


FIG. 1

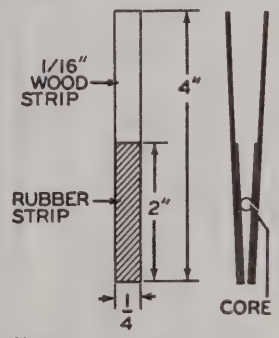


FIG. 2

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1956 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	12BD6	Note 1
V2	Converter	12BE6	Note 1
V3	IF Amplifier	12BD6	Note 1
V4	Det.-AVC-AF Amplifier	12CR6	Note 1
V5	Output	12AB5	Note 2
V6	Rectifier	12X4	Note 1

Note 1. 6 Volt equivalent type used in Model 396.
Note 2. 6AQ5 used in 6 volt model.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■15	350	23A485677	AFH3-104	C077	FP328	TMT-89	T-455	TVL-3630
B	▲10	350							
C	20	25							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	90		21A591682							
C3	150		21R410112	BPD-00015	DD-151	G046	811-151	UC-5315	5GA-T15	
C4	4.7		21R115955	NP0-SI4.7	TCZ-4R7	TZ07	NP0A-4R7	ZT-5547	5TCCB-V47	
C5	47		21R115593	N750-DI47	TCN-47	N033	N750K-470	NT-5447	5TCU-Q47	
C6	.05	400	8R121567	BPD-05	DF-503	CUB4S5		PT415	4TM-S5	
C7	.05	200	8R121005	BPD-05	DF-503	CUB2S5		PT415	4TM-S5	
C8	10000		21R482726	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C9	.05	400	8R121567	BPD-05	DF-503	CUB4S5		PT415	4TM-S5	
C10	.01	400	8R121002	BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C11	470		21R114554	BPD-00047	DD-471	K060	831-471	UC-5347	5GA-T47	
C12	.004	600	8R121000	SI4000	D6-402	CUB6D4	GP2-333-402	PT624	6TM-D4	
C13A	300		21A522033							
B	300									
C14	.04	1000	8R121549	P1088N-04		CUB16S4		PT1614	MB-S4	Note 1
C15	.5	100	8K122076	VHC36		MP2P5		RF480	68P20	Note 2
C16	.5	100	8K122076	VHC36		MP2P5		RF480	68P20	
C17	.5	100	8K122076	VHC36		MP2P5		RF480	68P20	

Note 1. Model 396 uses .02MFD in this application (part #8R121004).
Note 2. Not used in Model 396.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	250K	½	18B531560	AB-50	A47-250K-S	Q11-130	U-46	Volume
B	Shaft		Not Req.	AK-9	RS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	KB-4	SWE-13	76-1	US-26	Attach to R1A

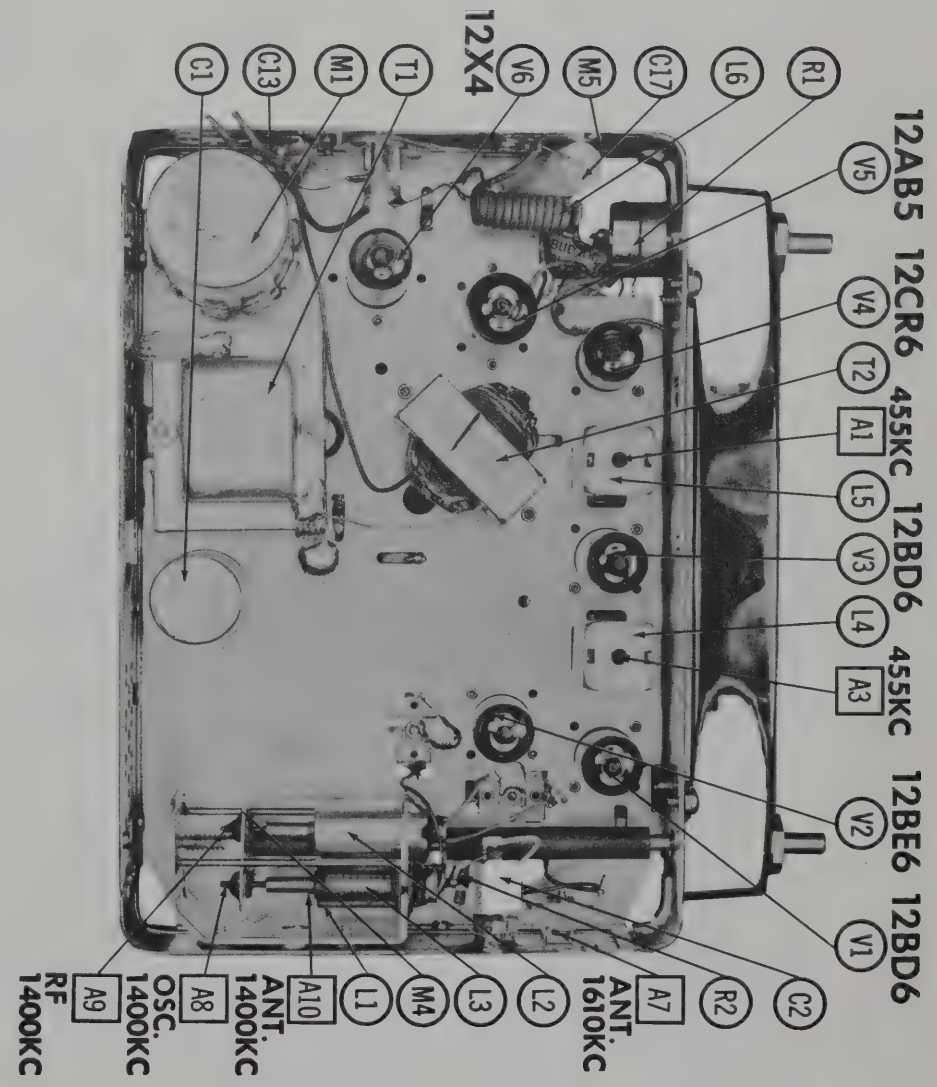
RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MOTOROLA PART No.	IRC PART No.	
R2	100K		6R6075	BTS-100K	
R3	1Meg		6R6004	BTS-1Meg	
R4	330Ω		6R6022	BTS-330	
R5	100K		6R6075	BTS-100K	
R6	47K		6R6056	BTS-47K	
R7	15K	2	6R5732	BTB-15K	
R8	560Ω		6R6291	BTS-560	Note 1
R9	3.3Meg		6R2118	BTS-3.3Meg	
R10	2.2Meg		6R3927	BTS-2.2Meg	
R11	1Meg		6R6004	BTS-1Meg	
R12	220K		6R6015	BTS-220K	
R13	270K		6R6414	BTS-270K	
R14	270Ω		6R6432	BTS-270	
R15	2200Ω	2	6R476130	BTB-2200	
R16	56Ω	1	6R2037	BTA-56	Note 2
R17	56Ω	1	6R2037	BTA-56	Note 2

Note 1. 6 volt models use 470Ω in this application (Part #6R6090).
Note 2. Used in 6 volt models only.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	12.6V @1.4A	476VCT @.05A			25C521841 ① 25K538445 ②				22R79	

① Used in Model 396-12.
② Used in Model 396.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5.2KΩ	3-4Ω	25B70171	ZL107	A-2930	A-3877	24S51	S-3X	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	RCA TYPE No.	
SP1	5 1/4"	PM	3-4Ω	50C534259	52A1	217S1	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil	13Ω						Note 2 (Part of M4)
L2	RF Coil	13Ω						Note 2 (Part of M4)
L3	Osc. Coil	.7Ω	2.6Ω					Note 2 (Part of M4)
L4	Input IF	18Ω	18Ω	24C485553	16-6758	BC-352	12-C1	
L5	Output IF	18Ω	18Ω	24K485554	16-6770	BC-355	12-C6	
L6	Fil. Choke	0Ω		24K580706				
L7	Vib. Hash Choke	.1Ω		24A538447				Note 1

Note 1. Part #24A532093 used in model 396.
Note 2. Ant. Coil part #24B502472 used in tuner #77D532163 (MT-127).
RF Coil part #24B502473 used in tuner #77D532163 (MT-127).
Osc. Coil part #24B502474 used in tuner #77D532163 (MT-127).
Ant. Coil part #24B537760 used in tuner #77D537759 (MT-186).
RF Coil part #24B502473 used in tuner #77D537759 (MT-186).
Osc. Coil part #24B502474 used in tuner #77D537759 (MT-186).
Ant. Coil part #24B537770 used in tuner #77K537768 (MT-187).
RF Coil part #24K536586 used in tuner #77K537768 (MT-187).
Osc. Coil part #24K536595 used in tuner #77K537768 (MT-187).

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA				NOTES
				MOTOROLA PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	RADIART PART No.	
M1	Interrupter	12.6V	115v	48B522000①	6301	G859	6301	① Used in Model 396-12
M1	Interrupter	6V	115v	48B3333 ②	5342	903M	5342	② Used in Model 396

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MOTOROLA PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	1AG	5A 32V	65R122345	9C536545	301005. (1AG 5A)	155004	AGA5	HRF
M2		9A	65R16248 *	9K536617 *				

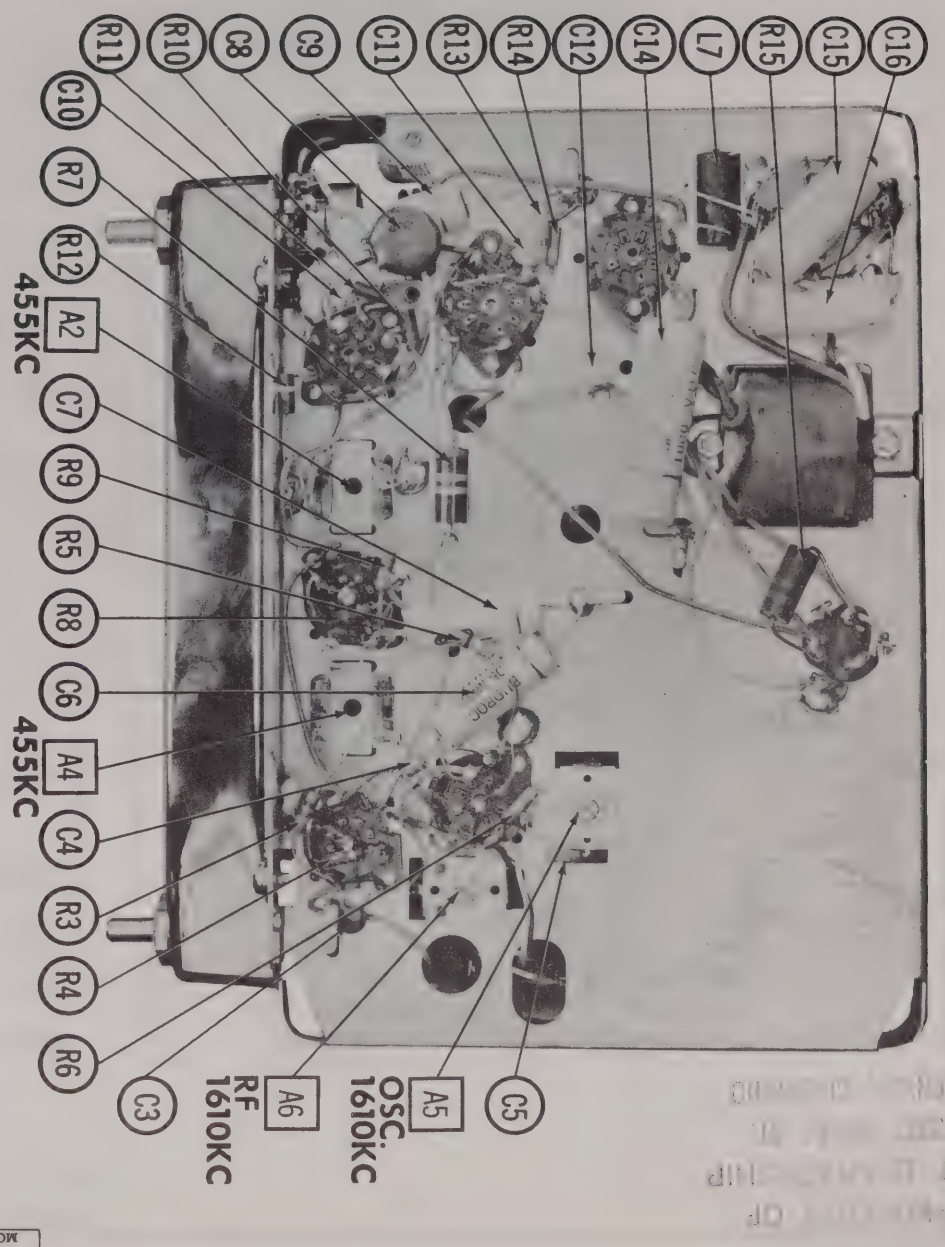
* Used in Model 396.

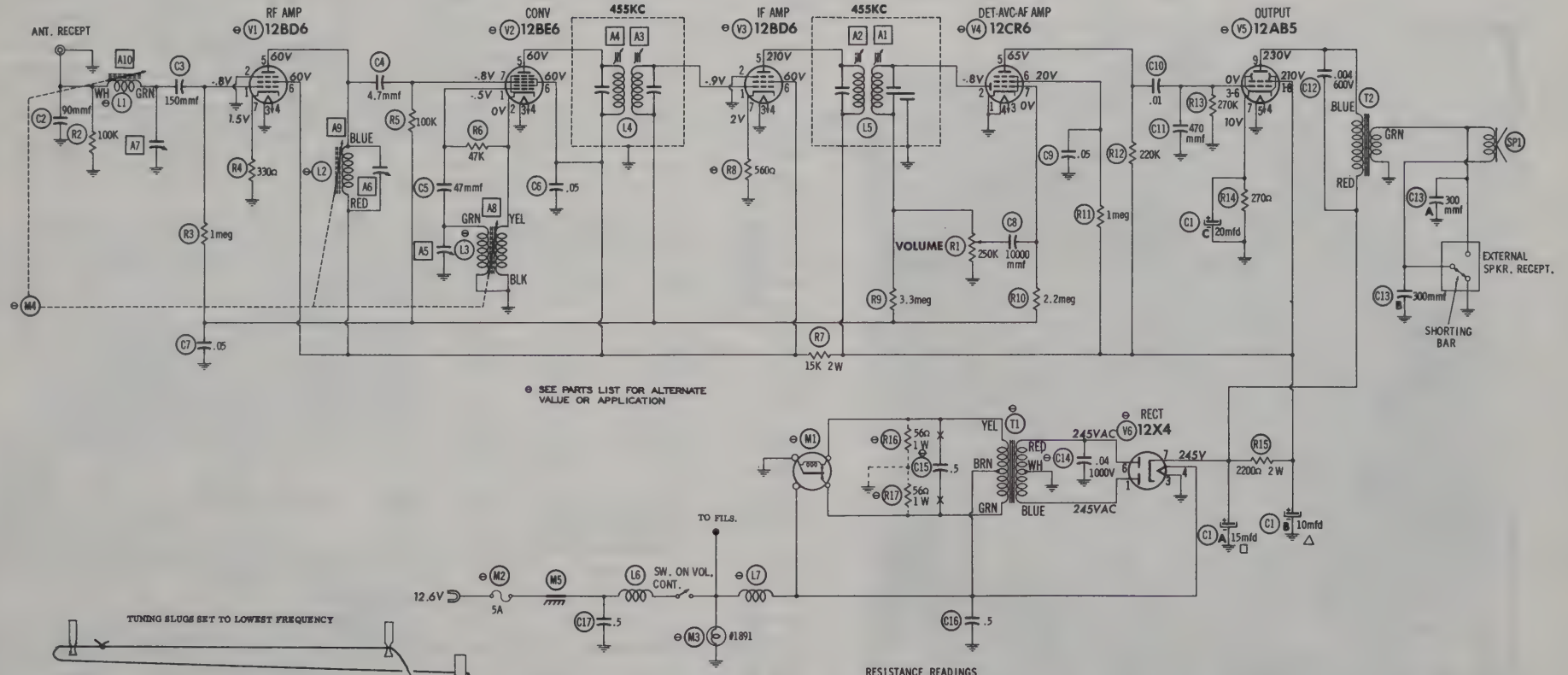
MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M3	Dial Light	65T533821	#1891 Model 396-12
	Dial Light	65X10867	#44 Model 396
M4	Tuner	77D532163 *	(MT-127) Permeability (complete) Includes L1, L2, L3
M5	Spark Plate	64K532087	
A5	Trimmer Cap.	20A485708	Osc. (395-470MMF)
A6	Trimmer Cap.	20A481526	RF (20-180MMF)
A7	Trimmer Cap.	20K536723	Ant. (50-280MMF)
	Knob	36B536544	On-off-volume & tuning
	Dial Pointer	1A501293	
	Dial Scale	34B536618	

* Alternate part nos. 77D537759 (MT-186), 77K537768 (MT-187).

CHASSIS—BOTTOM VIEW





DIAL CORD STRINGING

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12BD6	4.5Meg	0Ω	0Ω	1.4Ω	†17K	†17K	330Ω		
V2	12BE6	47K	.7Ω	0Ω	1.4Ω	†17K	†17K	3.6Meg		
V3	12BD6	3.5Meg	0Ω	0Ω	1.4Ω	†2200Ω	†17K	560Ω		
V4	12CR6	0Ω	250K	1.4Ω	0Ω	†220K	†1Meg	5.7Meg		
V5	12AB5	†2200Ω	NC	270K	1.4Ω	0Ω	270K	270Ω	†2200Ω	†345Ω
V6	12X4	320Ω	NC	0Ω	1.4Ω	TP	300Ω	15K		

† MEASURED FROM PIN 7 OF V6.
NC- NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on components values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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NEWCOMB
MODEL CO-100

NEWCOMB
MODEL CO-100

TRADE NAME	Newcomb Model CO-100		
MANUFACTURER	Newcomb Audio Prod. Co., 6824 Lexington Ave., Hollywood 38, Calif.		
TYPE SET	AC Operated FM-AM Superheterodyne Tuner		
TUBES (SEVEN)	Types 6BC5 FM RF Amplifier, 6BC5 FM Mixer, 12AT7 FM Osc.-AFC, 6BE6 AM Converter, 6BA6 1st IF Amplifier, 6AU6 2nd FM IF Amplifier-AM Detector, 6AL5 Ratio Detector		
POWER SUPPLY	110-120 Volts AC - 60 Cycles	RATING	.27 Amp. @ 117 Volts AC
TUNING RANGE - BROADCAST	530KC - 1700KC	FM	88MC - 108MC

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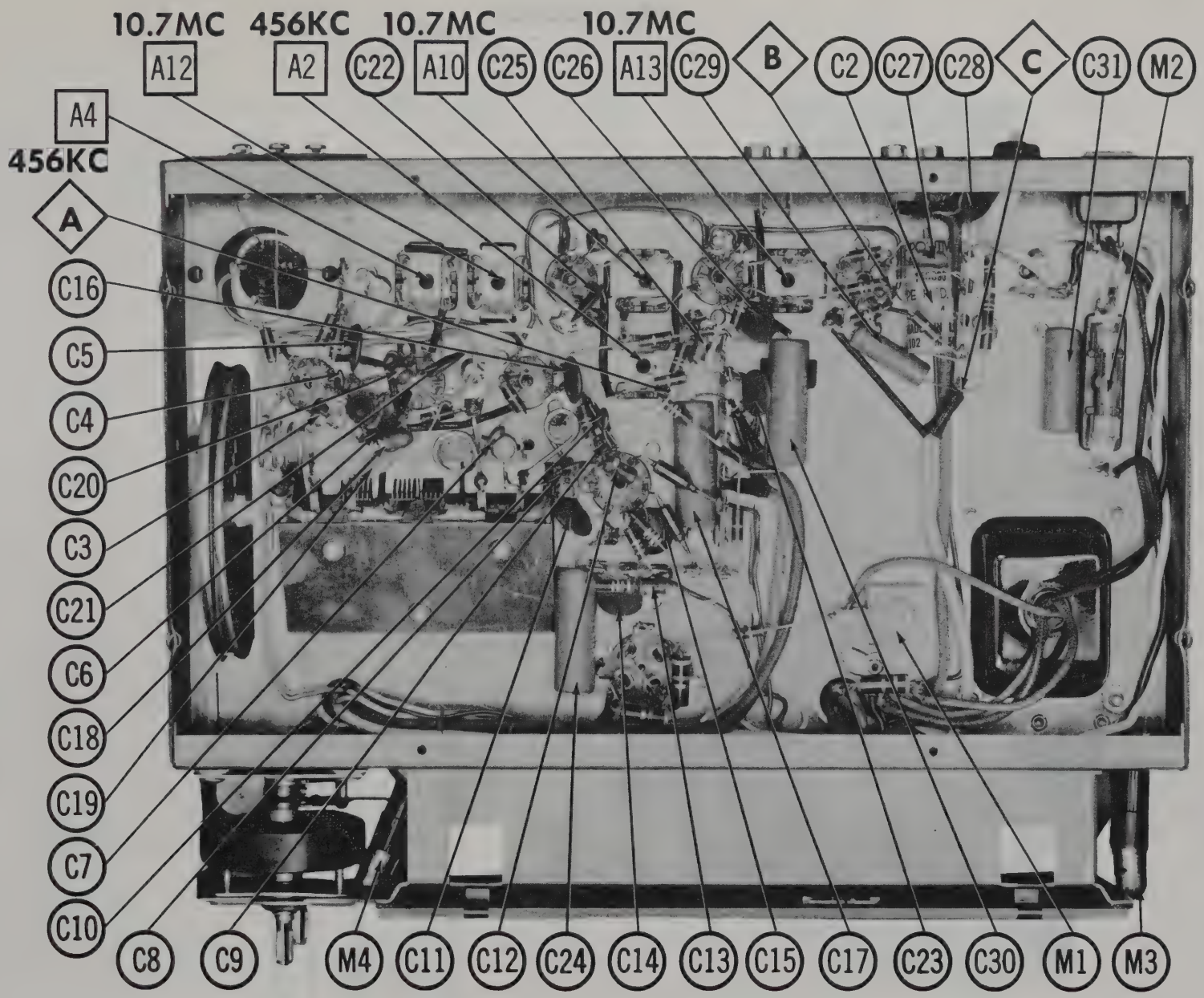
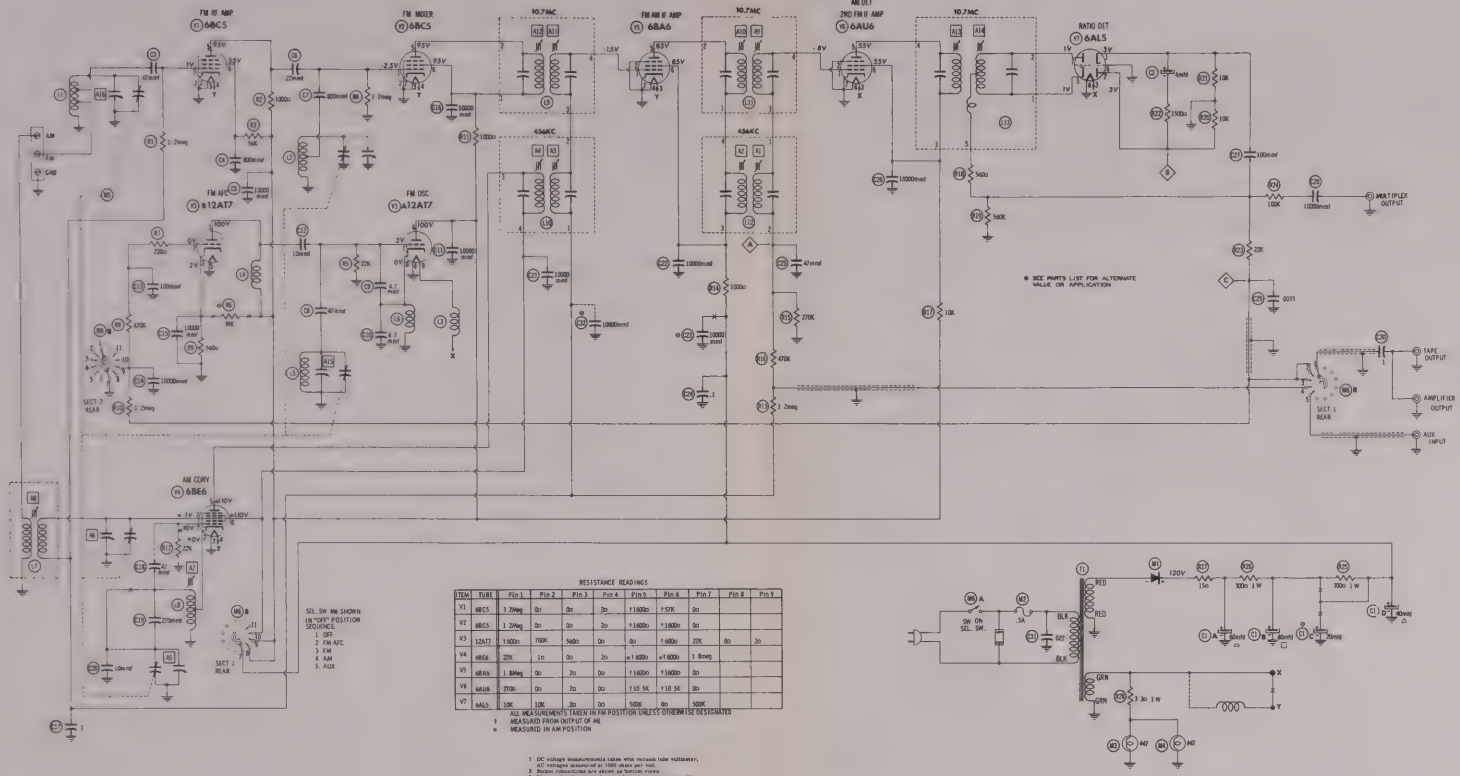


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BC5	1.2Meg	0Ω	0Ω	2Ω	†160Ω	†57K	0Ω		
V2	6BC5	1.2Meg	0Ω	0Ω	2Ω	†160Ω	†180Ω	0Ω		
V3	12AT7	†600Ω	700K	560Ω	0Ω	0Ω	†680Ω	22K	0Ω	2Ω
V4	6BE6	22K	1Ω	0Ω	2Ω	ø†600Ω	ø†600Ω	1.8meg		
V5	6BA6	1.8Meg	0Ω	2Ω	0Ω	†160Ω	†160Ω	0Ω		
V6	6AU6	270K	0Ω	2Ω	0Ω	†10.5K	†10.5K	0Ω		
V7	6AL5	10K	10K	3Ω	0Ω	500K	0Ω	500K		

ALL MEASUREMENTS TAKEN IN FM POSITION UNLESS OTHERWISE DESIGNATED
† MEASURED FROM OUTPUT OF M6
ø MEASURED IN AM POSITION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 cycles per volt.
2. Signal generator output set at 1000 cycles modulation.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Maximum tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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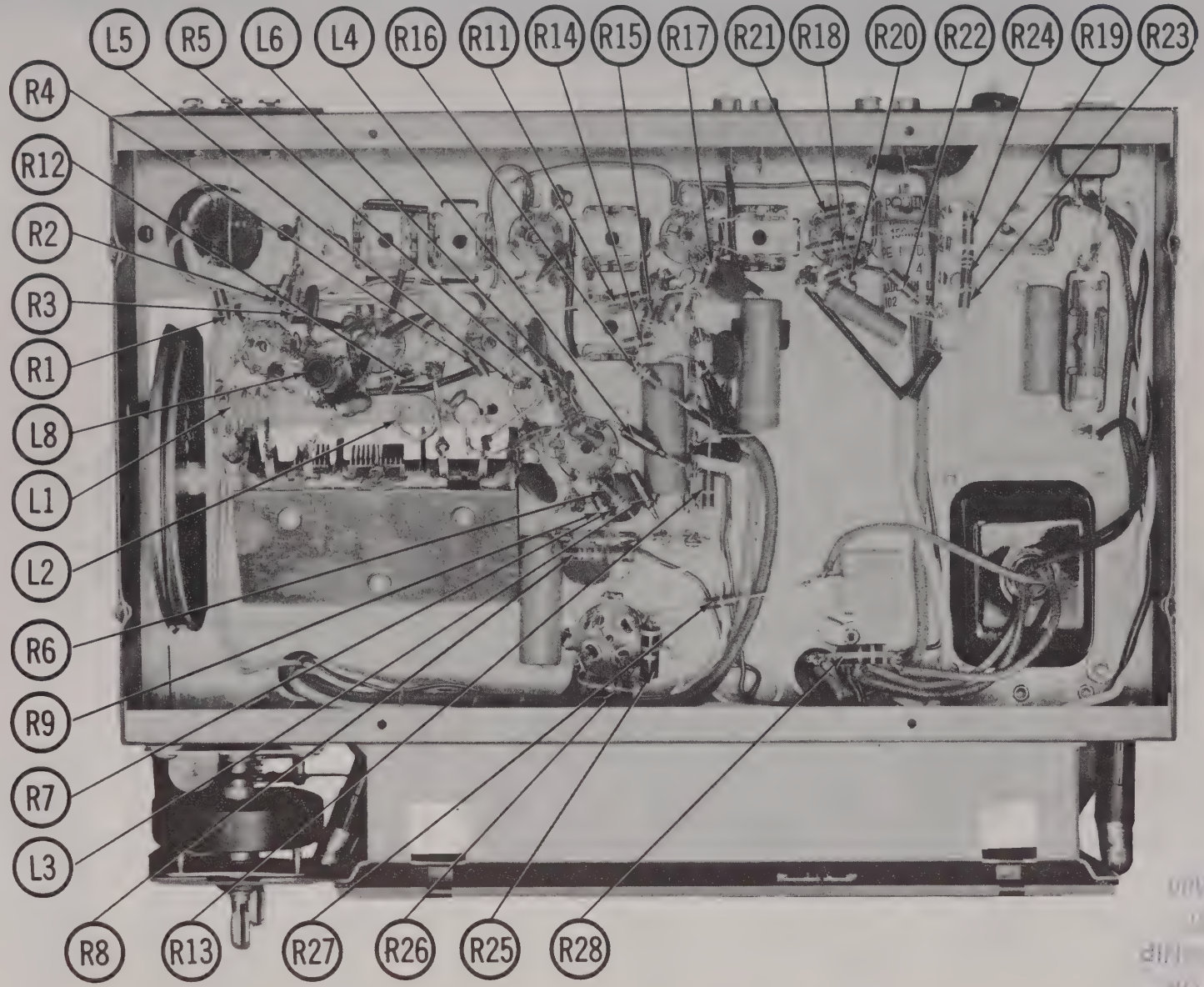


CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
With tuning gang fully closed pointer should coincide with "0" on logging scale.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (grid) of 6BE6 (V4). Low side to chassis.	456KC (400∿ Mod)	AM	Tuning gang fully open.	DC probe to point Ⓐ. Common to chassis.	A1, A2, A3, A4	Adjust for maximum deflection.
2.	200MMF	High side to AM antenna terminal.	1500KC	"	1500KC	"	A5, A6	"
3.	"	"	600KC	"	600KC	"	A7, A8	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

AFC to "No AFC" position.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (grid) of 6BC5 (V2). Low side to chassis.	10.7MC (unmod)	FM	Point of non-interference.	DC probe to point Ⓐ. Common to chassis.	A9, A10, A11, A12	Adjust for maximum deflection.
5.	"	High side to pin 1 (grid) of 6AU6 (V6). Low side to chassis.	"	"	"	DC probe to point Ⓑ. Common to chassis.	A13	"
6.	"	"	"	"	"	DC probe to point Ⓒ. Common to chassis.	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.
AFC to "No AFC" position.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (grid) of 6BC5 (V2). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference.	Vert. amp. to point Ⓐ. Low side to chassis.	A9, A10, A11, A12	Disconnect stabilizing capacitor C2. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
5.	"	High side to pin 1 (grid) of 6AU6 (V6). Low side to chassis.	"	"	"	Vert. amp. to point Ⓑ. Low side to chassis.	A13	"
6.	"	"	"	"	"	Vert. amp. to point Ⓒ. Low side to chassis.	A14	Reconnect stabilizing capacitor C2. Adjust so that 10.7MC occurs at center of cross-over lines similar to Fig. 1. SLIGHTLY retouch for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

AFC to "No AFC" position.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	270Ω carbon resistor	High side thru 270Ω to FM antenna terminal. Low side to chassis.	106MC	FM	106MC	DC probe to point Ⓐ. Common to chassis.	A15, A16	Adjust for maximum deflection.

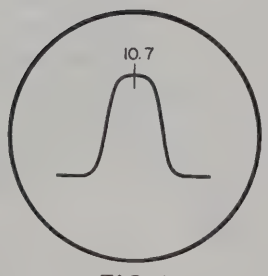


FIG. 1

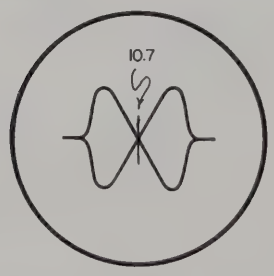
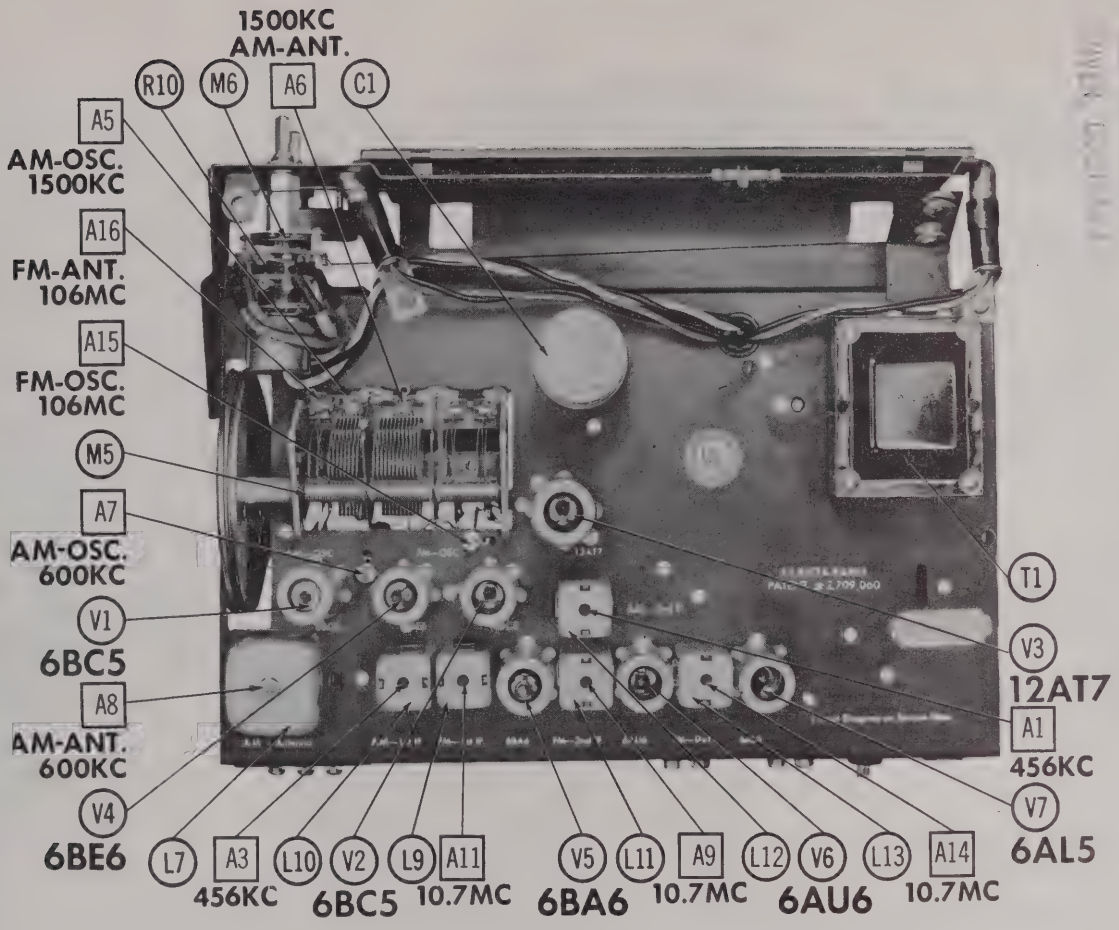
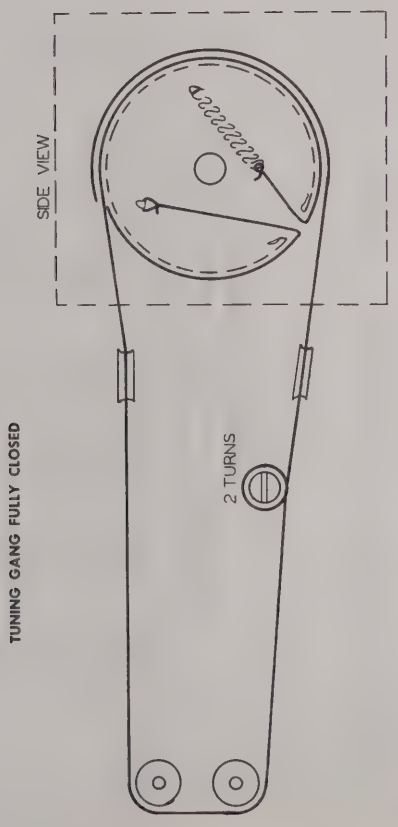


FIG. 2

CHASSIS—TOP VIEW



DIAL CORD STRINGING



PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM RF Amplifier	6BC5	
V2	FM Mixer	6BC5	
V3	FM Osc. -AFC	12AT7	
V4	AM Converter	6BE6	
V5	1st IF Amplifier	6BA6	
V6	2nd FM IF Amp. - AM Det.	6AU6	
V7	Ratio Detector	6AL5	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	NEWCOMB PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▬60	150	CE-40	AFH4-01	D001	FP311. 7		Q-005	R2291*
B	■40	150			BR2015	TC48		MT-1520	
C	20	150	(Note 1)						
D	▲40	150							
C2	4	25	CE-41	SRE25V5	BBR4-50	TC30	TD-4-25	MMT-0505	TVA-1203

Note 1: Section C1C not used in some versions.
* Non catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	NEWCOMB PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C3	47		CM-3	SI47	D6-470	TP29	GP1K-470	UC-5447	5GA-Q47	
C4	800		CM-44	BPD-0008	DD-801	G067	831-801	UC-5375	5GA-T8	
C5	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C6	22		CM-48	NP0-DI22	TCZ-22	Z024	NP0K-220		5TCC-Q22	
C7	800		CM-44	BPD-0008	DD-801	G067	831-801	UC-5375	5GA-T8	
C8	47		CM-45	NP0-DI47	TCZ-47	Z033	NP0-338-470	ZT-5447	5TCC-Q47	
C9	4. 7		CM-47	NP0-SI4. 7	TCZ-4R7	Z010	NP0A-4R7	ZT-5547	5TCCB-V47	
C10	4. 7		CM-47	NP0-SI4. 7	TCZ-4R7	Z010	NP0A-4R7	ZT-5547	5TCCB-V47	
C11	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C12	10		CM-51	N750-SI10	TCN-10	TN01	N750A-100	NT-541	5TCU-Q1	
C13	100		CM-14	SI100	D6-101	TP34	801-101	UC-531	5GA-T1	
C14	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C15	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C16	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C17	.1	400	CP-51	P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C18	47		CM-3	NP0-SI47	D6-470	Z033	831-470	ZT-5447	5TCC-Q47	
C19	270		CM-49	NP0-SI270	D6-271	5R5T27	811-271		MS-327	
C20	10		CM-51	N750-SI10	TCN-10	TN01	N750A-100	NT-541	5TCU-Q1	
C21	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C22	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C23	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	Note 2
C24	.1	400	CP-51	P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C25	47		CM-3	SI47	D6-470	TP29	831-470	UC-5447	5GA-Q47	
C26	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C27	100		CM-14	NP0-SI100	D6-101	TZ30	801-101	MCB235	MS-31	
C28	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C29	.0033	600	CP-69	DI-0033	D6-332	CUB6D33	GP2-333-332	PT6233	6TM-D33	
C30	.1	400	CP-51	P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C31	.022	600	CP-47	BPD-02	DF-203	CUB6S22	817-02	PT6122	6TM-S22	
C32	10000		CM-32	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	Note 2

Note 2: Not used in some versions.

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA NEWCOMB PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R1	1. 2Meg		RR-38	BTS-1. 2Meg	
R2	1000Ω		RR-6	BTS-1000	
R3	56K		RR-25	BTS-56K	
R4	1. 2Meg		RR-38	BTS-1. 2Meg	
R5	22K		RR-21	BTS-22K	
R6	39K		RR-24	BTS-39K	Note 1
R7	220Ω		RR-2	BTS-220	
R8	470K		RR-33	BTS-470K	
R9	560Ω		RR-4	BTS-560	
R10	1. 2Meg		RR-38	BTS-1. 2Meg	
R11	1000Ω		RR-6	BTS-1000	
R12	22K		RR-21	BTS-22K	
R13	1. 2Meg		RR-38	BTS-1. 2Meg	
R14	1000Ω		RR-6	BTS-1000	
R15	270K		RR-31	BTS-270K	
R16	470K		RR-33	BTS-470K	
R17	10K		RR-18	BTS-10K	
R18	560Ω		RR-4	BTS-560	
R19	560K		RR-34	BTS-560K	
R20	10K		RR-18	BTS-10K	
R21	10K		RR-18	BTS-10K	
R22	1500Ω		RR-8	BTS-1500	
R23	22K		RR-21	BTS-22K	
R24	100K		RR-27	BTS-100K	
R25	300Ω 5%	1	RR-177	BTA-300 5%	
R26	300Ω 5%	1	RR-177	BTA-300 5%	
R27	15Ω		RR-178	BTS-15	
R28	3. 3Ω	1	RR-179	BW1-3. 3	

Note 1: Not used in some versions.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	NEWCOMB PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC @. 27A	118VAC @. 035A	6. 3VAC @2. 3A		TR-184	P9102 ①	P3045①	PA-842①①		

① Drill new mounting holes.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	NEWCOMB PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	FM Ant. Coil	0Ω		RC-14				Tapped
L2	FM RF Coil	0Ω		RC-15				Tapped
L3	Fil. Choke	. 2Ω		RC-6	19-1002		4606	2. 2 Microhenries
L4	RF Choke	. 2Ω		RC-6	19-1002		4606	2. 2 Microhenries
L5	FM Osc. Coil	0Ω		RC-16				
L6	Cathode Choke	. 2Ω		RC-6	19-1002		4606	2. 2 Microhenries
L7	AM Ant. Coil	55Ω	3. 3Ω	RC-12				
L8	AM Osc. Coil	7Ω		RC-26				Tapped @ . 7Ω
L9	1st FM IF	. 6Ω	. 6Ω	RC-10	16-3487	FM-254	1463	
L10	1st AM IF	10. 5Ω	10. 5Ω	RC-24	16-6758	BC-352	12-C1	
L11	2nd FM IF	. 6Ω	. 6Ω	RC-10	16-3487	FM-254	1463	
L12	2nd AM IF	11. 5Ω	11. 5Ω	RC-25	16-6758	BC-353	12-C2	
L13	Ratio Det.	4. 2Ω	1. 6ΩCT	RC-23	17-3498	FM-255	1465	Tertiary Winding=. 9Ω

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	NEWCOMB PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	MALLORY PART No.	RADIO RECEPTOR PART No.	SARKES TARZIAN PART No.	NOTES
M1	. 035A		1386	RS065Q	6S65	8J1	65	

FUSES

ITEM No.	TYPE	RATING	NEWCOMB PART No. FUSE	NEWCOMB PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M2	3AG S/B	½A 250V			313. 500 (3AG-S/B-½A)	357001	MDL½	4405

MISCELLANEOUS

ITEM No.	PART NAME	NEWCOMB PART No.	NOTES
M3	Dial Light		#47
M4	Dial Light		#47
M5	Tuning Cap.	CV5	5 Gang (AM Sections: 22-385MMF, 15-240MMF)
M6A	Switch	SY-92	Selector (4 Pole-5 Position; Rotary, Wafer Type)
B	Switch	SY-92	On-Off (Power) SPST

RCA VICTOR MODELS 6-HF-1,
6-HF-2 (Ch. RC-1154, A, RS-147)

RCA VICTOR MODELS 6-HF-1,
6-HF-2 (Ch. RC-1154, A, RS-147)

TRADE NAME	RCA Victor Models 6-HF-1, 6-HF-2 (Ch. RC-1154 or RC-1154A, RS-147, RK-196, TR-1)
MANUFACTURER	RCA Victor Radio & "Victrola" Div., Radio Corp. of America, Camden 8, N.J.
TYPE SET	AC Operated FM-AM Superheterodyne Receiver With 3 Speed Automatic Record Changer (Tape Recorder Model TR-1 and Speaker Unit RK-196 used with Model 6-HF-1 only)
TUBES	Seventeen plus transistorized phono preamplifier stage
POWER SUPPLY	110-120 Volts AC-60 Cycles RATING 1.54 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC FREQ. MOD. 88-108MC

FOR SERVICE INFORMATION ON RECORD CHANGER - SEE RCA VICTOR MODELS RP-197 or RP-198 SERIES - PHOTOFACT SET 273-FOLDER 9 OR RECORD CHANGER MANUAL CM-7.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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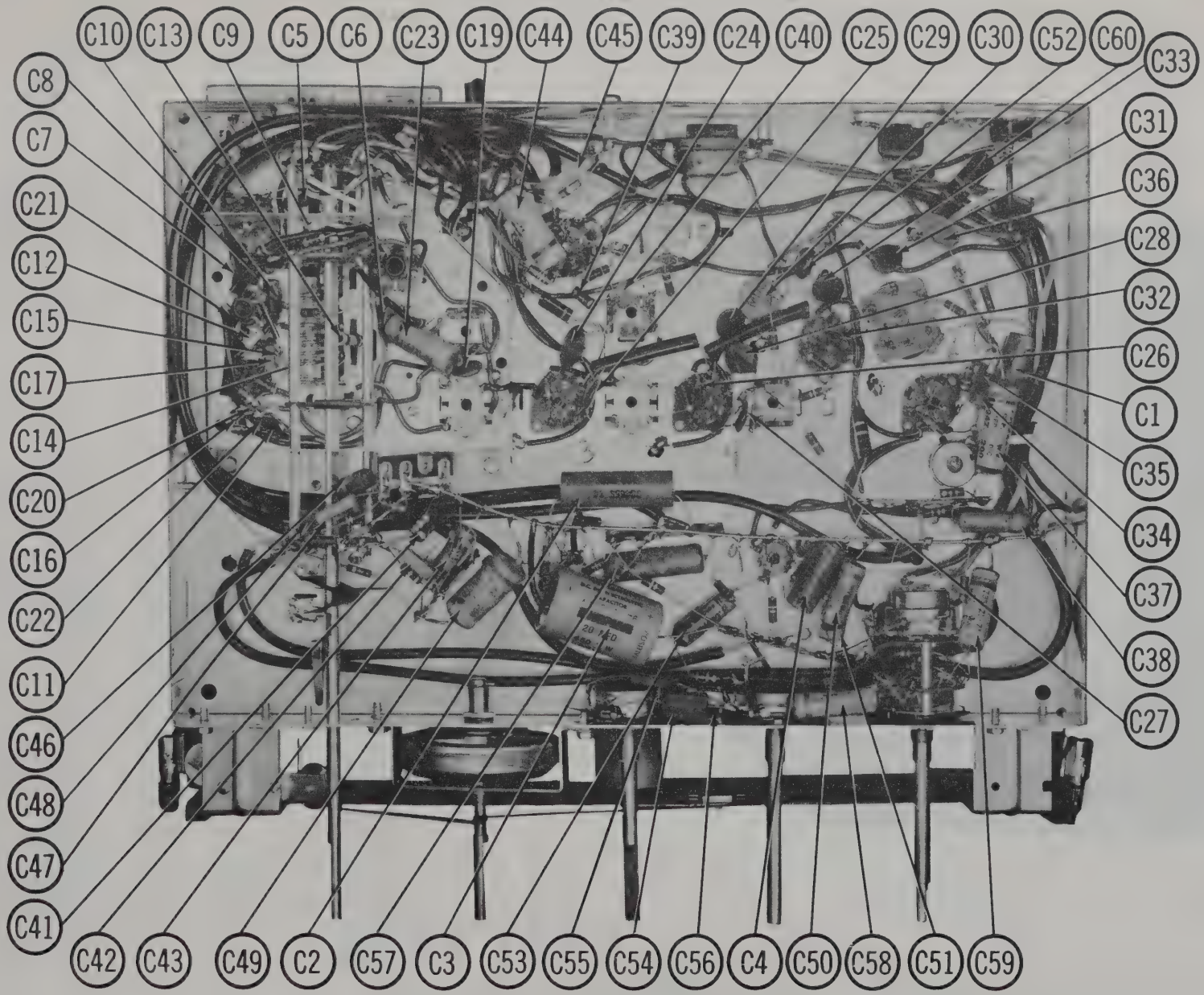
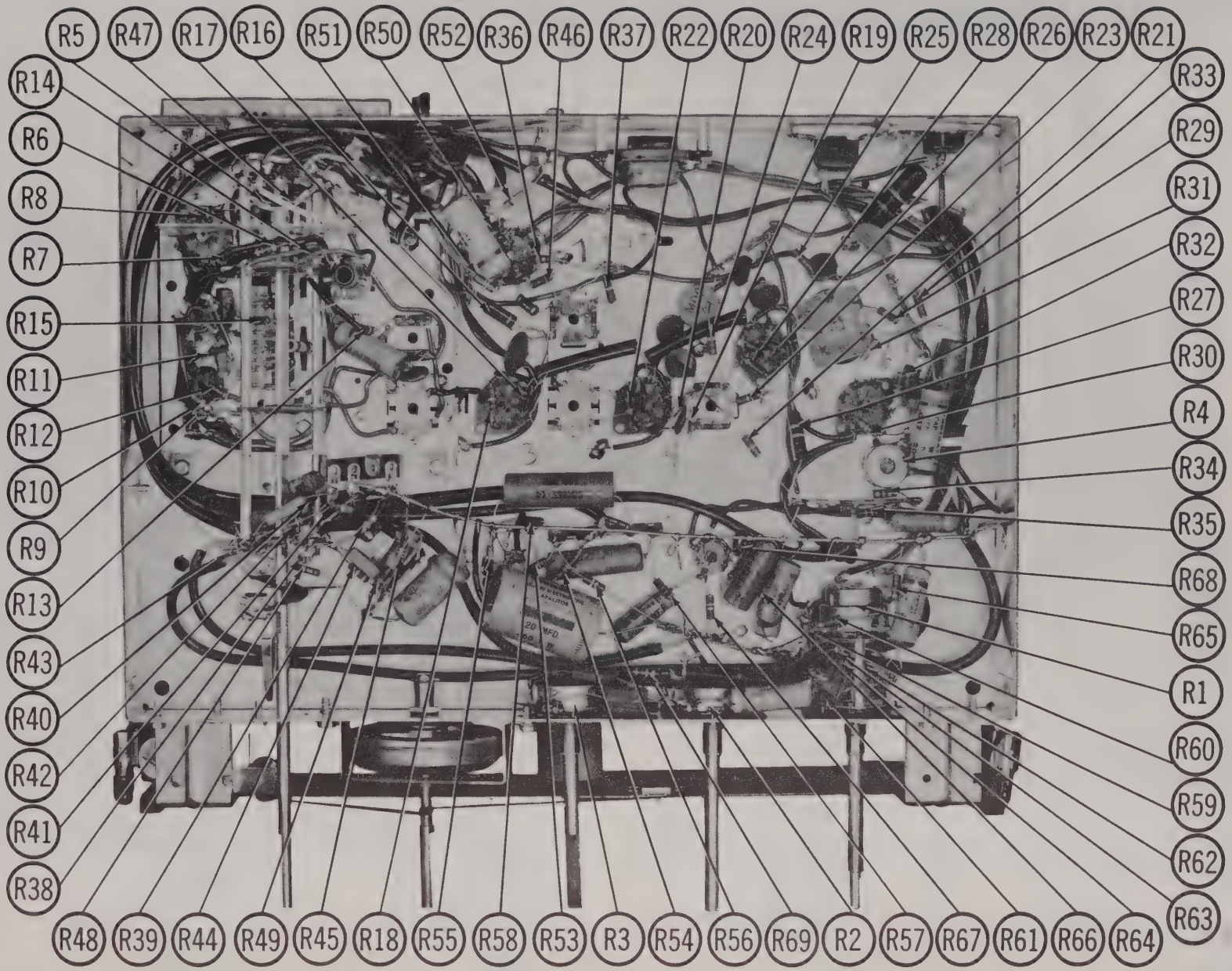


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	455KC (400%Mod)	AM	Point of non-interference	Across voice coil	A1, A2,	Adjust for maximum output.
2.	"	"	455KC (10KC Mod)	"	"	"	A3	Adjust for MINIMUM output.
3.	"	High side to junction of L7 and R15. Low side to chassis.	455KC (400%Mod)	"	"	"	A4, A5	Shunt primary (A5) with 1K resistor. Adjust A4 for maximum output. Move 1K shunt to secondary (A4). Adjust A5 for maximum output.
4.		Loop	1620KC	"	Tuning gang fully open	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
5.		"	1400KC	"	Tune to 1400KC signal	"	A7, A8	"
6.		"	600KC	"	Tune to 600KC signal	"	A9	Shunt RF section of tuning gang with 10K resistor. Adjust A9 for maximum output while rocking tuning gang. Remove shunt.
7.		"	"	"	"	"	A10	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Repeat steps 4, 5, 6 and 7.

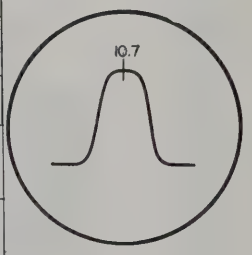


FIG. 1

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	.01MFD	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	10.7MC (Unmod)	FM	Point of non-interference	DC probe to point Ⓐ. Common to chassis.	A11	Adjust for maximum deflection.
9.	"	High side FM RF stator lug. Low side to chassis.	"	"	"	"	A12, A13	Shunt primary (A13) with 270Ω resistor. Adjust A12 for maximum deflection. Move shunt to secondary (A12). Adjust A13 for maximum deflection.
10.	"	"	"	"	"	DC probe to point Ⓐ. Common to chassis.	A14, A15	Adjust for maximum deflection.
11.	"	"	"	"	"	DC probe to point Ⓑ. Common to chassis.	A16	"
12.	"	"	"	"	"	DC probe to point Ⓒ. Common to chassis.	A17	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
13.	"	"	"	"	"	"		Adjust balance control (R4) for MINIMUM audio output.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
8.	.01MFD	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. to point Ⓐ. Low side to chassis.	A11, A12, A13	Disconnect C1. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
9.	"	High side to stator lug on FM RF section of tuning gang. Low side to chassis.	"	"	"	"	A14, A15	"
10.	"	"	"	"	"	Vert. Amp. to point Ⓑ. Low side to chassis.	A16	"
11.	"	"	"	"	"	Vert. Amp. to point Ⓒ. Low side to chassis.	A17	Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A16 for maximum amplitude and straightness of cross-over lines. Reconnect C1.
12.	"	"	10.7MC (AM Mod)	"	"			Adjust balance control (R4) for MINIMUM audio output.

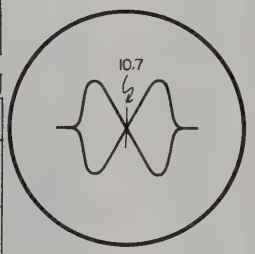
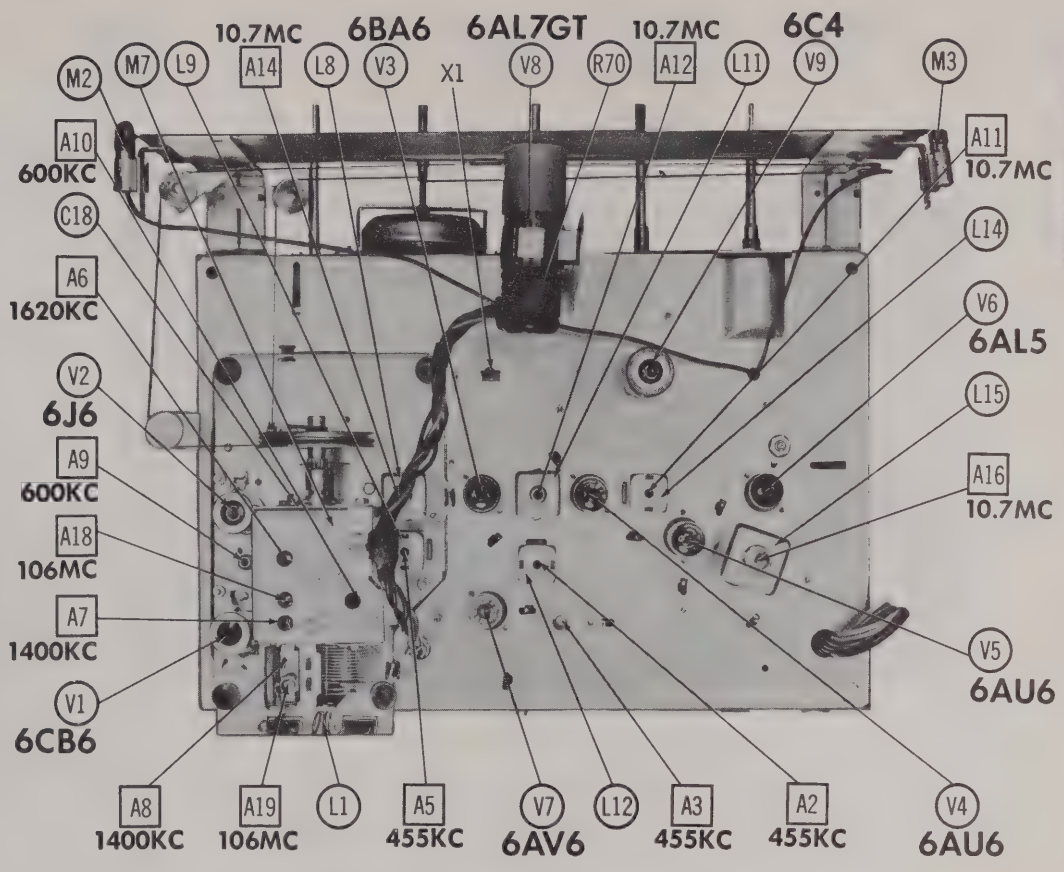


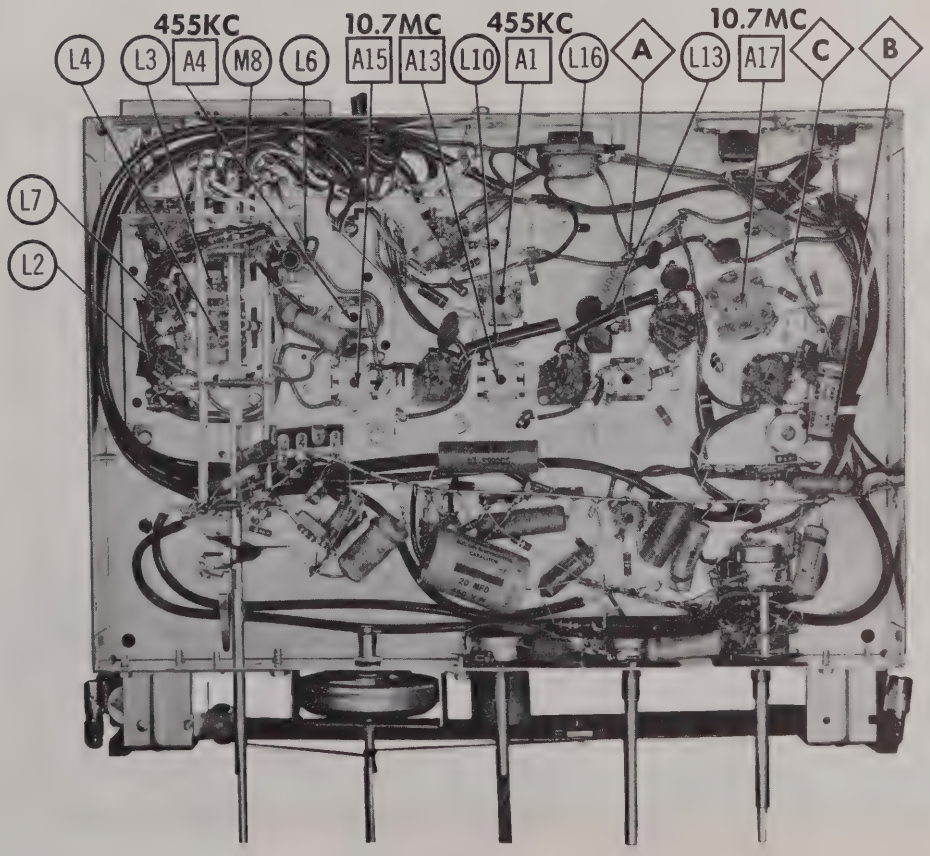
FIG. 2

FM RF ALIGNMENT

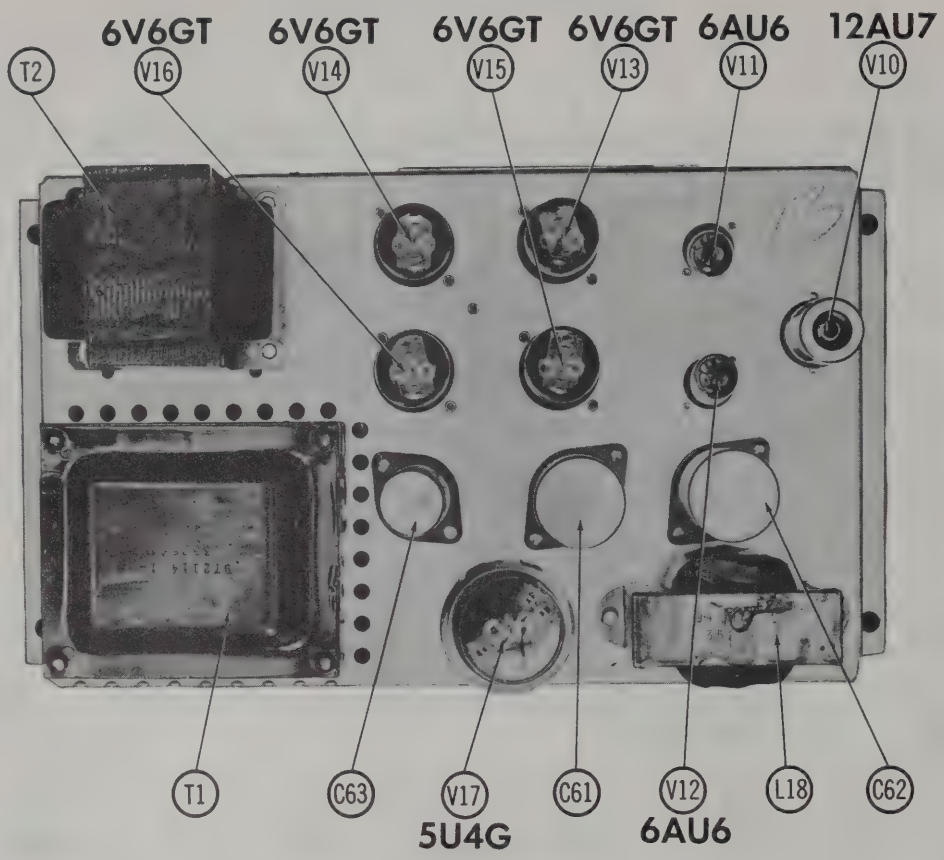
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
14.	Two 120Ω Carbon Resistors	To FM antenna terminals with 120Ω in each lead.	90MC	FM	90MC	DC probe to point Ⓐ. Common to chassis.	L8	Adjust for maximum deflection by expanding or compressing coil turns.
15.	"	"	106MC	"	106MC	"	A18, A19	Adjust for maximum deflection.
16.	"	"	90MC	"	90MC	"	L3, L1	Adjust for maximum deflection by expanding or compressing coil turns. Repeat steps 15 and 16.



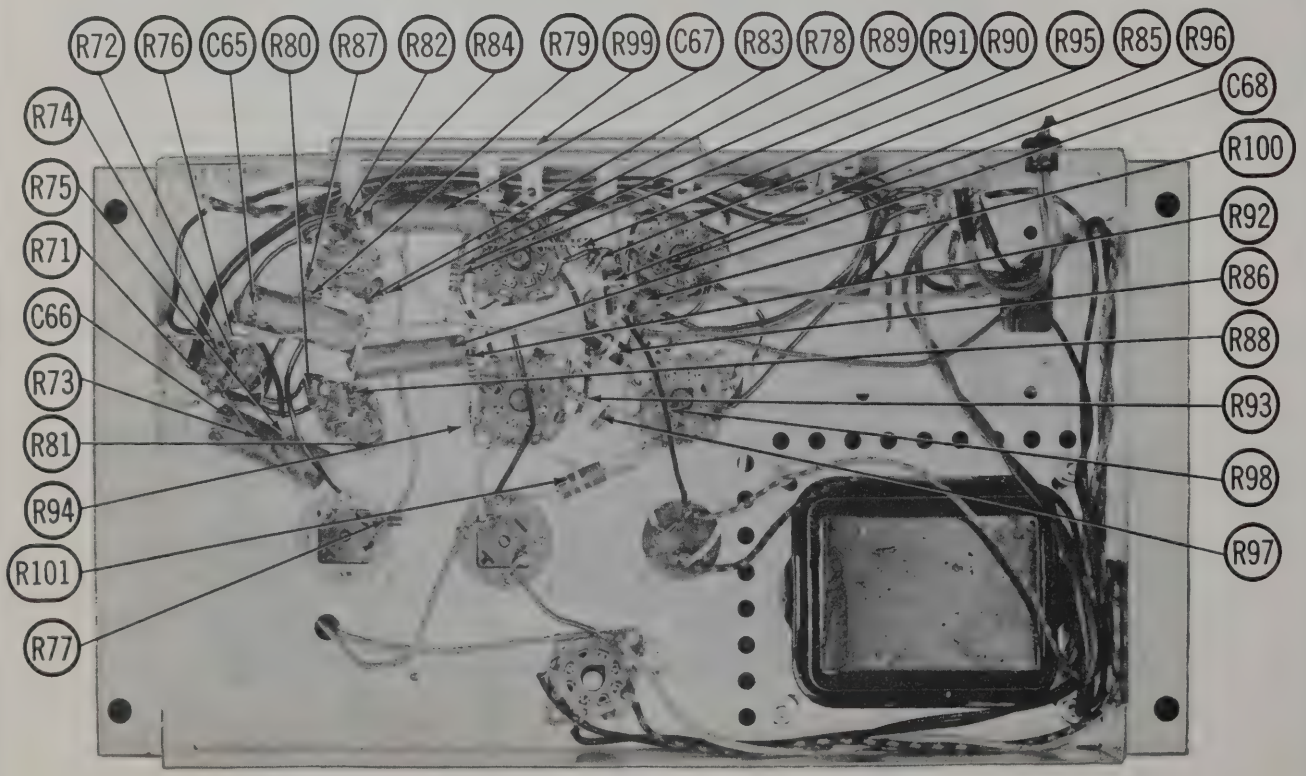
TUNER CHASSIS - TOP VIEW



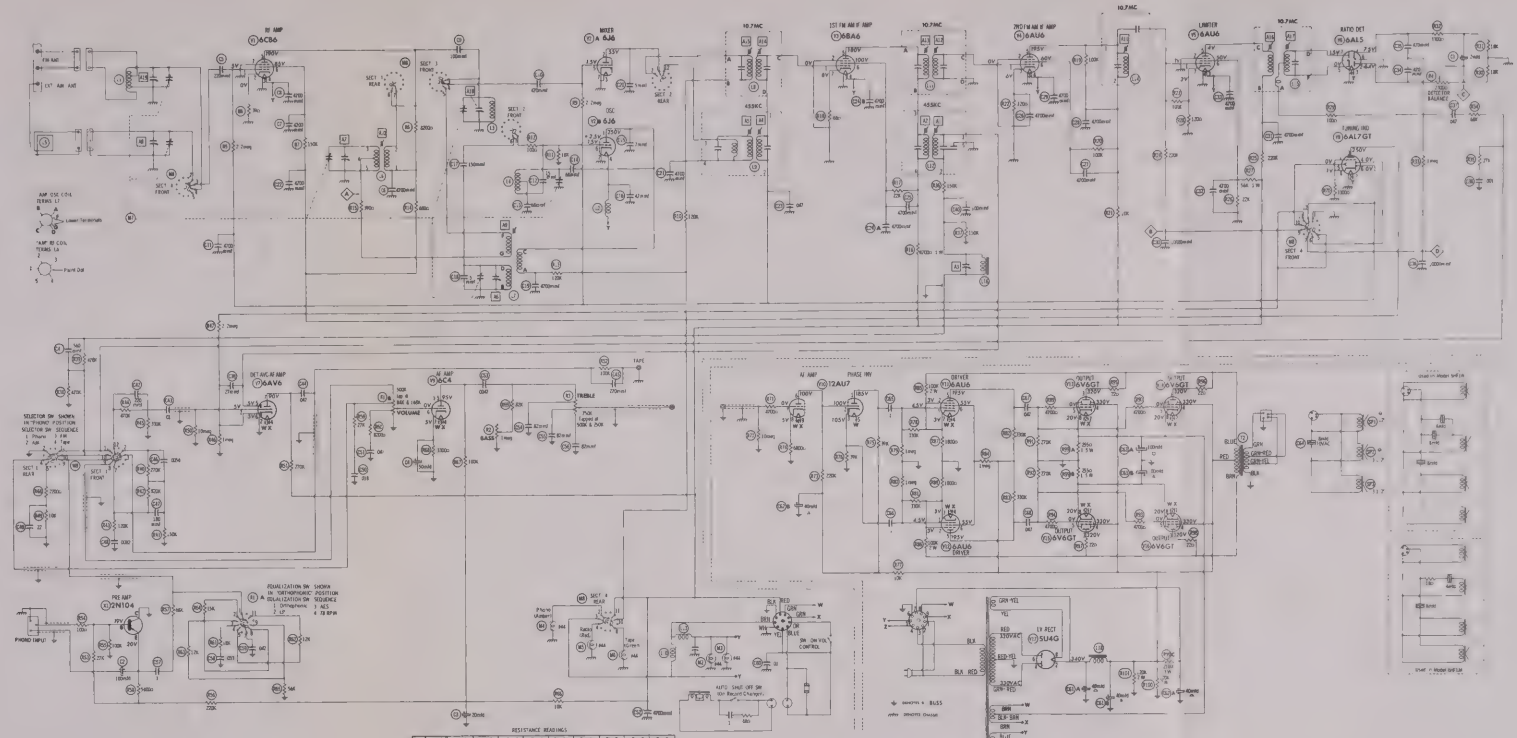
BOTTOM VIEW - ALIGN POINTS



POWER SUPPLY CHASSIS-TOP VIEW



POWER SUPPLY CHASSIS-BOTTOM VIEW



Item	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CB6	2.25Meg	Pin	Gn	Sn	1.2Meg	1.15K	Gn		
V2	6J6	1.22K	1.22K	Sn	Sn	1.44Meg	3K	Gn		
V3	6BA6	3.3Meg	Sn	Gn	Sn	680Ω	30K	68Ω		
V4	6AU6	Sn	Gn	Gn	Sn	1.2K	1.22K	1.25Ω		
V5	6AU6	100P	Sn	Sn	Sn	1.22K	1.15K	1.25Ω		
V6	6AL5	22K	22K	Sn	Sn	1MF	Gn	1MF		
V7	6AV6	10Meg	Gn	270Ω	270Ω	820K	1Meg	272K		
V8	6AL7GT	1.5KΩ	Gn	1.220Ω	530K	150K	330K	Sn	330Ω	
V9	6C4	1.1.2K	NC	270Ω	270Ω	1.1.2K	280K	330Ω		
V10	12AU7	1.50K	1.220K	39K	270Ω	270Ω	1.220K	1.1Meg	680Ω	270Ω
V11	6AU6	2.6K	1.800Ω	270Ω	270Ω	1.220K	1.1.1Meg	1.800Ω		
V12	6AU6	2.6K	1.800Ω	270Ω	270Ω	1.220K	1.1.1Meg	1.800Ω		
V13	6V6GT	NC	270Ω	1.180Ω	1.650	270K	TP	270Ω	250Ω	
V14	6V6GT	NC	270Ω	1.180Ω	1.650	270K	TP	270Ω	250Ω	
V15	6V6GT	NC	270Ω	1.330Ω	1.650	270K	TP	270Ω	250Ω	
V16	6V6GT	NC	270Ω	1.330Ω	1.650	270K	TP	270Ω	250Ω	
V17	5U4G	NC	20K	NC	30Ω	NC	28Ω	NC	20K	

		Base	Emitter	Collector
		1.90K	1.20K	
Q1	2N404	1.90K	1.20K	Gn

RESISTANCE READINGS

1 DC voltage measurements taken with vacuum tube voltmeter
2 Between chassis and point indicated
3 Between indicated point and ground with switch in OFF position
4 Measured in R.F. and other applicable circuits with 20,000Ω ohms per volt meter and 0.1 mfd. condenser in series with positive meter lead. Readings may vary depending on individual receiver characteristics and line voltage variations.
5 Measured with 1,000 ohms per volt meter and 0.1 mfd. condenser in series with positive meter lead. Readings may vary depending on individual receiver characteristics and line voltage variations.
6 Tolerance from 10% of indicated value unless otherwise noted
7 Voltage may be read directly on highest 1000 ohms per volt voltage measuring scale

⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

ALL MEASUREMENTS TAKEN IN FM POSITION UNLESS OTHERWISE DESIGNATED
+ MEASURED FROM P16 OF V17
* MEASURED IN AM POSITION
‡ READING INDICATES REVERSAL OF METER LEADS
NC CONNECTION
TP TEST POINT

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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PARTS LIST AND DESCRIPTIONS
TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6CB6	
V2	Mixer-Oscillator	6J6	
V3	1st. IF Amplifier	6BA6	
V4	2nd. IF Amplifier	6AU6	
V5	3rd. FM IF Amplifier	6AU6	
V6	Ratio Detector	6AL5	
V7	AM Det.-AVC-AF Amp.	6AV6	
V8	Tuning Indicator	6AL7GT	
V9	AF Amplifier	6C4	

TRANSISTOR

ITEM No.	USE	TYPE	NOTES
X1	Phono Preamplifier	2N104	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	2	50	79181	PRS50V2	BBR2-50	TC302	TD-2-50	MT-0502	TVA-1301
C2	100	25	100552	PRS25V100	BRH251	TC2501	TD-100-25	MTH-2510	TVA-1207
C3	20	450	56243	PRS450V20	BR2045	TC75	TD-20-450	FM-4520	TVA-1709
C4	50	6	78573	SRE6V50	BBR50-6	TC29	TD-50-6	MMT-650	TVA-1100

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	220		75611	SI220	D6-221	TP39	GP2K-221	UC-5322	5GA-T22	
C6	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C7	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C8	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C9	100		39396	SI100	D6-101	TP34	GP1K-101	UC-531	5GA-T1	
C10	470	500	76992	SI470	D6-471	TP46	GP2K-471	UC-5347	5GA-T47	
C11	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C12	15		39044	N750-SI15	TCN-15	TN03	N750K-150		5TCU-Q15	
C13	68		93229	NP0-SI68	TCZ-68	TZ26	NP0-337-680		5TCC-Q68	
C14	68		75612	N750-SI68	TCN-68	TN18	N750L-680		5TCU-Q68	
C15	7		78262	NP0-SI6.8	TCZ-6.8	Z014	NP0A-6R8	ZT-5568	5TCCB-V68	
C16	47		75609	SI47	D6-470	TP29	GP1K-470	UC-5447	5GA-Q47	
C17	150		75614	NP0-SI150	D6-151	TZ34	811-151	MCB236	MS-315	
C18	5		75613	N750-SI5	TCN-5	N011	N750A-050	NT-555	5TCUB-V5	
C19	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C20	5		75613	N750-SI5	TCN-5	N011	N750A-050	NT-555	5TCU-V5	
C21	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C22	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C23	.047	200	73558	BPD-05	DF-503	CUB2S47		PT4147	4TM-S47	
C24A	4700		76470	BPD-2X0047	DD2-502	DK079	811-0047	UC-5247	5HK-2D47	
B	4700						811-0047	UC-5247		
C25	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C26	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C27	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C28	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C29	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C30	10000		73960	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C31	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C32	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C33	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C34	470	500	77941	1464-00047	D6-471	5R5T47	811-471		MS-347	
C35	470	500	77941	1464-00047	D6-471	5R5T47	811-471		MS-347	
C36	10000		73960	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C37	.047	200	73558	BPD-05	DF-503	CUB2S47		PT4147	2TM-S47	
C38	.001	600	75643	1464-001		1R5D1	811-102	MCB255	MS-21	
C39	27		100514	SI27	D6-270	TP26	GP1K-270	UC-5427	5GA-Q27	
C40	100		75437	SI100	D6-101	TP34	GP1K-101	UC-531	5GA-T1	
C41	560		76685	1464-00056	D6-561	TP48	811-561	UC-5356	5GA-T56	
C42	220	500	39636	SI220	D6-221	5W5T22	811-221	UC-5322	1FM-T22	
C43	.01	200	73561	BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C44	.047	400	73553	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C45	270	500	39638	SI270	D6-271	5W5T27	811-271	UC-5327	1FM-327	

PARTS LIST AND DESCRIPTIONS (Continued)
CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C46	.0056	400	73788							
C47	180	500	79344	SI180	D6-181	5W5T18	811-181	UC-5318	1FM-318	
C48	.0082	400	79019	1464-0082		1DR3D82			MS-282	
C49	.22	200	100650	P288N-22		CUB2P22		PT4022	2TM-P22	
C50	.018	200	77469							
C51	.047	200	73558							
C52	4700		73473	BPD-0047	DD-472	K079	811-0047	UC-5247	5HK-D47	
C53	.0047	400	73920	BPD-0047	D6-472	CUB6D5	GP2-333-472	PT625	6TM-D5	
C54	82	500	39626	1469-000082	D6-820	22R5Q82	801-820		MS-482	
C55	82	500	39626	1469-000082	D6-820	22T5Q82	801-820		MS-482	
C56	82	500	39626	1469-000082	D6-820	22R5Q82	801-820		MS-482	
C57	.1	200	73784	P288N-1	DF-104	CUB2P1		PT401	2TM-P1	
C58	.033	200	79015							
C59	.047	200	73558							
C60	.01	600	73565	BPD-01	D6-103	CUB6S1	GP3-333-103	PT611	6TM-S1	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	Switch		100548 ♦					Equalizer
B	500K	½		ABT-159		Q18-133XX	UDT-283	Volume-tapped @84K & 168K
C	Shaft			AK-1		RQ	Not Req.	Attach to R1B
D	Switch			KB-1		76-1	US-26	Attach to R1B
R2A	1Meg	½	100525	AB-70	A47-1Meg-Z	Q13-137	U-53	Bass
B	Shaft		Not Req.	AK-3	FS-3	C3	DS-36	Attach to R2A
R3A	750K	½	100524	ABT-165		Q18-137XX		Treble-tapped @500K &250K
B	Shaft		Not Req.	AK-3		C3		Attach to R3A
R4	2300Ω	½	77199					Ratio Detector Balance

♦ Complete assembly. Replacements listed do not include R1A.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	RCA Victor PART No.	IRC PART No.	NOTES
R5	2.5Meg		502522	BTS-2.2Meg	
R6	8200Ω		502282	BTS-8200	
R7	150K		502415	BTS-150K	
R8	39Ω		502039	BTS-39	
R9	2.2Meg		502522	BTS-2.2Meg	
R10	120K		502412	BTS-120K	
R11	18K		502318	BTS-18K	
R12	100Ω		502110	BTS-100	
R13	120K		502412	BTS-120K	
R14	680Ω		502168	BTS-680	
R15	390Ω		30498	BTS-390	
R16	4700Ω	1	512247	BTA-4700	
R17	22K		502322	BTS-22K	
R18	68Ω		502068	BTS-68	
R19	100K		502410	BTS-100K	
R20	100K		502410	BTS-100K	
R21	10K		502310	BTS-10K	
R22	120Ω		502112	BTS-120	
R23	100K		502410	BTS-100K	
R24	220K		502422	BTS-220K	
R25	220K		502422	BTS-220K	
R26	22K		502322	BTS-22K	
R27	56K	1	512356	BTA-56K	
R28	120Ω		502112	BTS-120	
R29	100Ω		502110	BTS-100	
R30	18K		502318	BTS-18K	
R31	18K		502318	BTS-18K	
R32	3300Ω		502233	BTS-3300	
R33	1Meg		502510	BTS-1Meg	
R34	68K		502368	BTS-68K	
R35	27K		502327	BTS-27K	
R36	150K		502415	BTS-150K	
R37	150K		502415	BTS-150K	

ITEM No.	RATING OHMS	RATING WATT	RCA Victor PART No.	IRC PART No.	NOTES
R38	470K		502447	BTS-470K	
R39	470K		502447	BTS-470K	
R40	270K		502427	BTS-270K	
R41	150K		502415	BTS-150K	
R42	820K		502482	BTS-820K	
R43	120K		502412	BTS-120K	
R44	470K		502447	BTS-470K	
R45	330K		502433	BTS-330K	
R46	1Meg		502510	BTS-1Meg	
R47	2.2Meg		502522	BTS-2.2Meg	
R48	2200Ω		502222	BTS-2200	
R49	10K		502310	BTS-10K	
R50	10Meg		502610	BTS-10Meg	
R51	270K		502427	BTS-270K	
R52	100K		502410	BTS-100K	
R53	27K 5%		502327	BTS-27K 5%	
R54	100Ω		502110	BTS-100	
R55	100K		502410	BTS-100K	
R56	220K		502422	BTS-220K	
R57	68K		502368	BTS-68K	
R58	5600Ω 5%		502256	BTS-5600 5%	
R59	27K		502337	BTS-27K	
R60	8200Ω		502282	BTS-8200	
R61	18K 5%		502318	BTS-18K 5%	
R62	12K 5%		502312	BTS-12K 5%	
R63	12K 5%		502312	BTS-12K 5%	
R64	15K 5%		502315	BTS-15K 5%	
R65	56K 5%		502356	BTS-56K 5%	
R66	10K		502310	BTS-10K	
R67	100K		502410	BTS-100K	
R68	3300Ω		502233	BTS-3300	
R69	82K		502382	BTS-82K	
R70	3300Ω			BTS-3300	

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	RCA Victor PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	FM Ant. Coil	0Ω		77313				Tapped
L2	Fil. Choke	0Ω		71942	19-1000		4602	1 Microhenry
L3	FM RF Coil	0Ω		77314				
L4	FM Osc. Coil	0Ω		77315				Tapped
L5	AM Loop Ant.	.2Ω	2.1Ω	100534				
L6	AM RF Coil	73Ω	3.5Ω *	77305				* Tapped @ 2.5Ω
L7	AM Osc. Coil	1.1Ω	6.7Ω	75569				Tertiary winding-1.8Ω
L8	1st. FM IF	.2Ω	.2Ω	77514	16-3471	FM-251 ♦	1451 ♦	♦ Drill new mtg. hole
L9	1st. AM IF	14Ω ■	9Ω	100532				■ Tertiary winding-3.2Ω
L10	Fil. Choke	0Ω		71942	19-1000		4602	1 Microhenry
L11	2nd. FM IF	.9Ω	.3Ω	75560				
L12	2nd. AM IF	13Ω	13Ω	73037	16-6770	BC-355	12-C6	
L13	Fil. Choke	0Ω		71942	19-1000		4602	
L14	3rd. FM IF	.9Ω		77939				
L15	Ratio Det.	.9Ω	.1ΩCT	73743	17-3488	FM-252	1453	Tertiary winding -.1Ω
L16	10KC Filter	930Ω		100528				

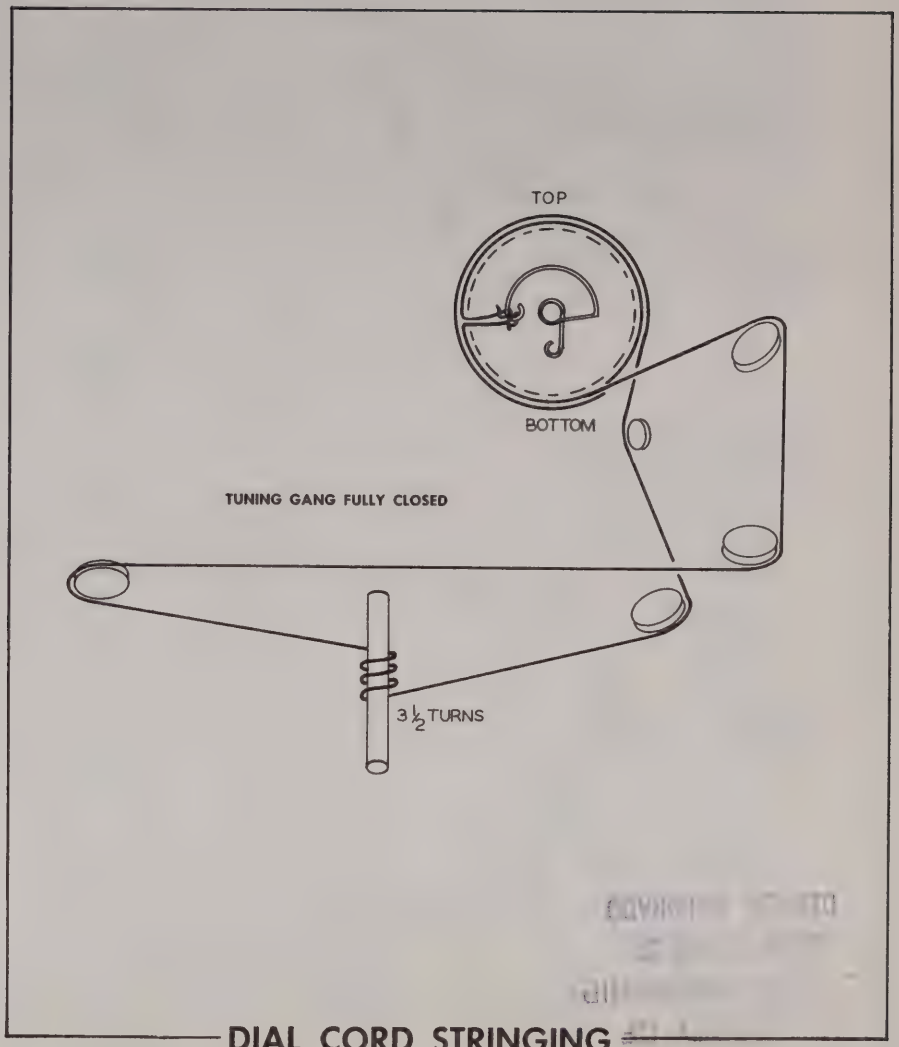
PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	RCA Victor PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	100806			84M	0-1 or 8-1 & 0-3	

ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED.

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M2	Dial Light	11891	#44
M3	Dial Light	11891	#44
M4	Indicator Light	11891	#44 (Phono)
M5	Indicator Light	11891	#44 (Radio , AM-FM)
M6	Indicator Light	11891	#44 (Tape)
M7	Tuning Cap.	77308	6 Gang (AM sections: 26-502MMF, 23-285MMF, 18-180MMF)
M8	Switch	100537	Selector (Rotary, wafer type)
	Dial Pointer	100529	



DIAL CORD STRINGING

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V10	AF Amplifier-Phase Inv.	12AU7	
V11	Driver	6AU6	
V12	Driver	6AU6	
V13	Output	6V6GT	
V14	Output	6V6GT	
V15	Output	6V6GT	
V16	Output	6V6GT	
V17	Rectifier	5U4G	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C61A	▲40	450	58567	AFH2-57	B045	FP238	TMD-54	D-235	TVL-2764
B	▲40	450							
C62A	▲40	450	58567	AFH2-57	B045	FP238	TMD-54	D-235	TVL-2764
B	▲40	450							
C63A	■100	50	98645	AFH2-06-20		WP202.5		S-055 MTH-5010	R1709 †
B	▲100	50							
C64	8	10VAC		PRS10VAC8	BBR20-25T * BBR20-25T	TC44 * TC44		MMT-0220 * MMT-0220	R2201 †

* Connect negative leads together.
† Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C65	.1	400		P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C66	.1	400		P488N-1	DF-104	CUB4P1		PT401	4TM-P1	
C67	.047	400	73553	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	
C68	.047	400	73553	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	RCA Victor PART No.	IRC PART No.	NOTES
R71	4700Ω		502247	BTS-4700	
R72	10Meg		502610	BTS-10Meg	
R73	220K 5%		502422	BTS-220K 5%	
R74	6800Ω 5%		502268	BTS-6800 5%	
R75	39K 5%		502339	BTS-39K 5%	
R76	39K 5%		502339	BTS-39K 5%	
R77	10K		502310	BTS-10K	
R78	330K 5%		502433	BTS-330K 5%	
R79	1Meg 5%		502510	BTS-1Meg 5%	
R80	1Meg 5%		502510	BTS-1Meg 5%	
R81	330K 5%		502433	BTS-330K 5%	
R82	330K		502433	BTS-330K	
R83	330K		502433	BTS-330K	
R84	1Meg 5%		502510	BTS-1Meg 5%	
R85	100K 5%	2	522410	BTB-100K 5%	
R86	100K 5%	2	522410	BTB-100K 5%	
R87	1800Ω 5%		502218	BTS-1800 5%	
R88	1800Ω 5%		502218	BTS-1800 5%	
R89	4700Ω		502247	BTS-4700	
R90	4700Ω		502247	BTS-4700	
R91	270K		502427	BTS-270K	
R92	270K		502427	BTS-270K	
R93	4700Ω		502247	BTS-4700	
R94	4700Ω		502247	BTS-4700	
R95	22Ω		502222	BTS-22	
R96	22Ω		502022	BTS-22	
R97	22Ω		502022	BTS-22	
R98	22Ω		502022	BTS-22	
R99A	255Ω 5%	1½	100533		
B	255Ω 5%	1½			
C	2100Ω	3			
R100	120K	2	522412	BTB-120K	
R101	120K	2	522412	BTB-120K	

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	RATING SEC. 4	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC ②1.54A	655VCT ②.225A	5VAC ② 3A	6.3VAC ②2.75A	6.3VCT ②3.15A	100535			P-8331	26R33 ①	

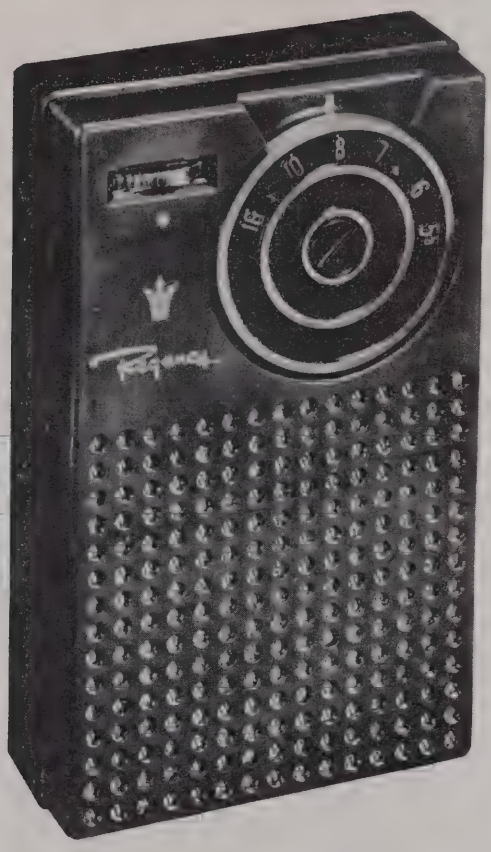
① Tape low HV winding. Tape 5V ② 3A winding.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	5.2KΩ	16Ω tap ② 8Ω tap ② 4Ω	100536						

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA RCA Victor PART No.	QUAM PART No.	RCA TYPE No.	NOTES
SP1	12"	PM	6-8Ω	100897 ①	12A10X	41287	① Used in Model 6-HF-2
SP2	3½"	PM	6-8Ω	100465 ①	3A15TZ6.6		② Used in Model 6-HF-1
SP3	3½"	PM	6-8Ω	100465 ①②	3A15TZ6.6		
	15"	PM	16Ω	100602 ②			
	5"	PM	8-10Ω	100603 ②			



REGENCY
MODEL TR-1G

REGENCY
MODEL TR-1G

TRADE NAME	Regency Model TR-1G
MANUFACTURER	Regency Div., I. D. E. A., Inc., 7900 Pendleton Pike, Indianapolis 26, Indiana
TYPE SET	Battery Operated Portable Transistor AM Superheterodyne Receiver
POWER SUPPLY	22.5 Volts "B" Battery — RATING 5MA @ 22.5 Volts DC
TUNING RANGE—BROADCAST	535KC - 1630KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.		Loop	262KC (400% Mod)	Tuning gang fully open.	Across ear-phone jack.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.		"	535KC	Tuning gang fully closed.	"	A4	"
3.		"	1630KC	Tuning gang fully open.	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Repeat steps 1 & 2.
4.		"	1500KC	Tune for maxi-mum signal.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. With tuning gang fully open, frequency range should extend to 1630KC. If not, repeat steps 3 & 4.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	USE	TYPE	NOTES
X1	Converter	100-875-1	
X2	IF Amplifier	100-875-2	
X3	IF Amplifier	100-875-2	
X4	Output	100-875-3	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	REGENCY PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	5	25	300-473-3	XPP25V5	EC5-25	TAP50-5	ML-5-25		TE-1202
C2	40	3	300-473-2	XPP3V40	EC40-3		ML-40-3		TE-1057
C3	2	25	300-473-5	XPP25V2	EC2-25		ML-2-25		TE-1202
C4	15	25	300-473-6	XPP25V15	EC15-25				TE-1205

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	REGENCY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	20000		100-772-2	BPD-02	DD-203	K085	817-02		5HK-S2	
C6	10000		20-075-22	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C7	268		100-771-1							
C8	1000		20-075-21	BPD-001	DD-102	K069	801-001	DC521	5HK-D1	
C9	50000		100-772-1							
C10	10		100-772-5	NP0-D110	TCZ-10	Z018	NP0A-100	ZT-541	5TCC-Q1	
C11	1000		20-075-21	BPD-001	DD-102	K069	801-001	DC521	5HK-D1	
C12	10000		100-772-4	BPD-01	DD-103	K082	811-01	DC511	5HK-S1	
C13	50000		100-772-1							
C14	1000		20-075-21	BPD-001	DD-102	K069	801-001	DC521	5HK-D1	
C15	10		100-772-5	NP0-D110	TCZ-10	Z018	NP0A-100	ZT-541	5TCC-Q1	
C16	50000		100-772-1							
C17	50000		100-772-1							Note 1
C18	1000		20-075-21	BPD-001	DD-102	K069	801-001	DC521	5HK-D1	

Note 1: Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	REGENCY PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	1000Ω	½	100-596-2					Volume - Note 1

Note 1: Some versions will use an alternate control part #100-596-3 in this application.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	REGENCY PART No.	IRC PART No.	
R2	82K		30-003-823	BTS-82K	
R3	56K		30-003-563	BTS-56K	
R4	18K		30-003-183	BTS-18K	
R5	2200Ω		30-001-222	BTS-2200	
R6	150K		30-003-154	BTS-150K	
R7	1200Ω		30-003-122	BTS-1200	
R8	2200Ω		30-001-222	BTS-2200	
R9	12K		30-003-123	BTS-12K	
R10	120K		30-003-124	BTS-120K	
R11	2700Ω		30-003-272	BTS-2700	
R12	2200Ω		30-001-222	BTS-2200	
R13	100Ω			BTS-100	Note 1
R14	6800Ω		30-003-682	BTS-6800	
R15	27K 5%			BTS-27K 5%	
R16	3900Ω 5%			BTS-3900 5%	
R17	1000Ω 5%			BTS-1000 5%	

Note 1: Not used in some versions.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	REGENCY PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	9.8K	15Ω	100-629		A-2700		TR-32		

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	REGENCY PART No.	QUAM PART No.	RCA TYPE No.	
SP1	2 3/4"	PM	15Ω	300-520			

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	REGENCY PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Loop Stick	.1Ω	5.5Ω	300-432-2				
L2	Osc. Coil	1.2Ω	11Ω*	300-553				* Tapped @ .3Ω
L3	1st IF Trans.	11Ω	1.1Ω	300-555-1				
L4	2nd IF Trans.	11Ω	1.1Ω	300-555-2				
L5	3rd IF Trans.	11Ω	1.5Ω	300-555-3				

BATTERIES

ITEM No.	VOLTAGE	REGENCY PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	22.5V	215		412			U15		

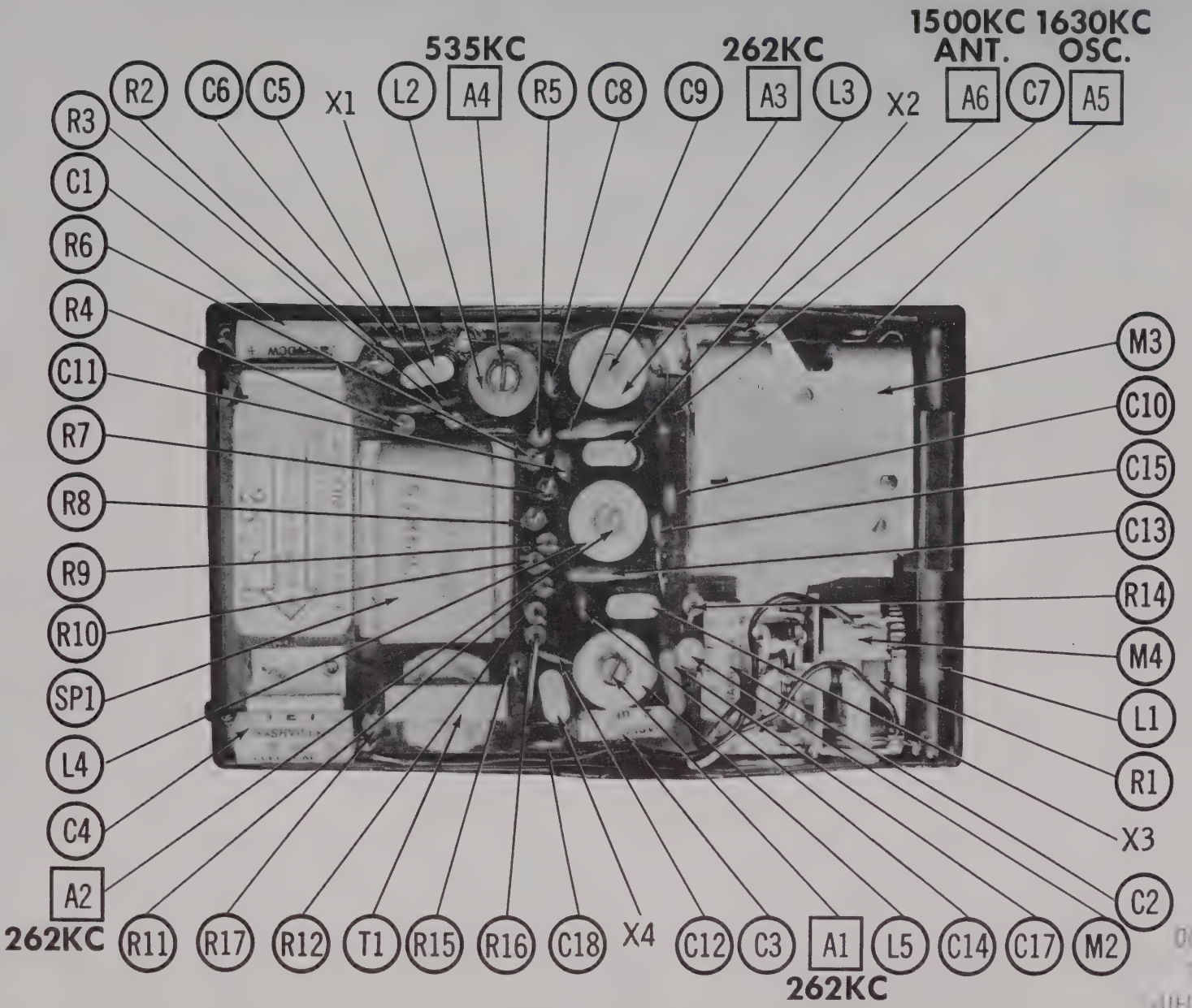
CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		REGENCY PART No.	SYLVANIA PART No.	
M2	DR117*	CK706A or DR117	1N60 or 1N132	Audio Det. (Pigtail)

* Some versions may use crystal diode type CK706A in this application.

MISCELLANEOUS

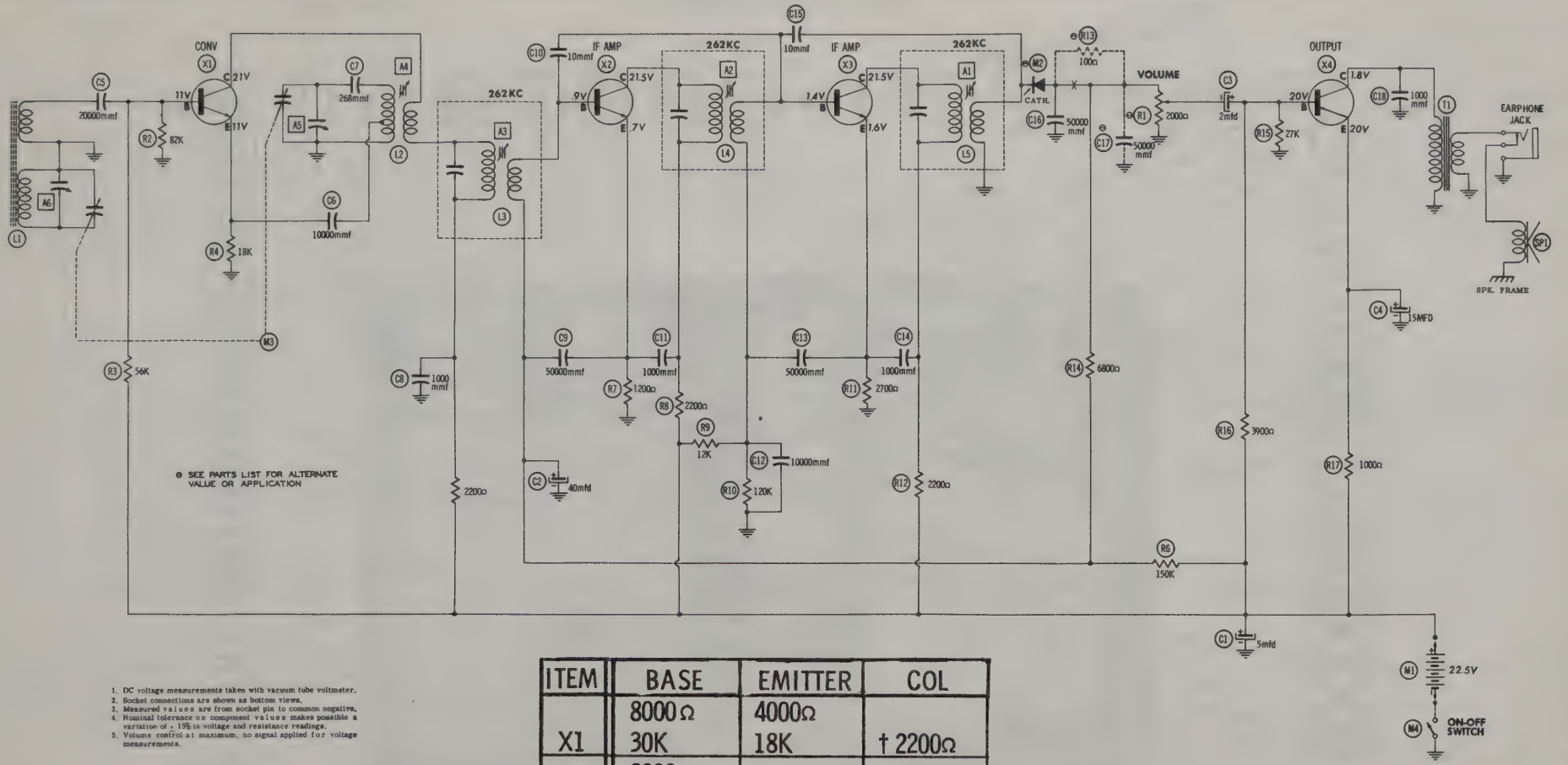
ITEM No.	PART NAME	REGENCY PART No.	NOTES
M3	Tuning Cap.	300-433	2 Gang (9-135MMF, 8-110MMF)
M4	Switch		On-Off (Switch consists of two contacts actuated by volume control knob) Switch Contact Part #300-437 & Switch Contact Wheel Part #100-707.
	Case	600-061-3A	
	Knob	300-556	Tuning
	Knob	300-435-4	On-Off-Volume
	Dial	300-556	
	Printed Wiring Board	500-316-2	



CHASSIS TOP VIEW

REGENCY
MODEL TR-1G

SET 334 FOLDER 9



1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

ITEM	BASE	EMITTER	COL
X1	8000Ω 30K	4000Ω 18K	†2200Ω
X2	2000Ω 7000Ω	1000Ω	†2200Ω
X3	3000Ω 9500Ω	1600Ω 2700Ω	†2200Ω
X4	1300Ω 3300Ω	†1000Ω	600Ω

DUAL READINGS INDICATE REVERSAL OF METER LEADS.

† MEASURED FROM POSITIVE SIDE OF C1.

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PHOTOFACT* Folder
*TRADE MARK

TRAV-LER MODELS 621-20, -21, -22, -25, -26 (Ch. 421M6)

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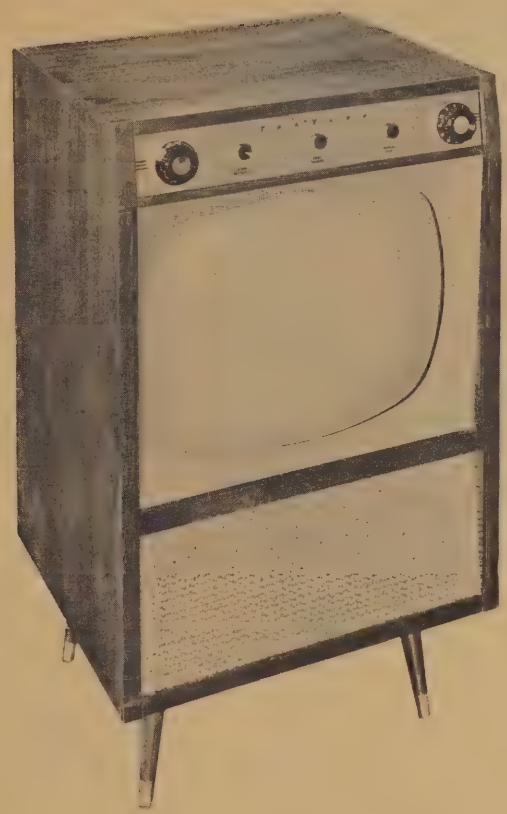

TRAV-LER MODELS 621-20, -21, -22, -25, -26 (Ch. 421M6)

TRAV-LER MODEL 621-25 (Ch. 412M6)

TRADE NAME	Trav-Ler Models 621-20, 621-21, 621-22, 621-25, 621-26 (Ch. 412M6)
MANUFACTURER	Trav-Ler Radio & Television Corp., 571 W. Jackson Blvd., Chicago 6, Illinois
TYPE SET	Television Receiver
TUBES	Twenty-one
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING 1.8 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13, Video IF 26.25MC, Sound IF 21.75MC (Intercarrier)

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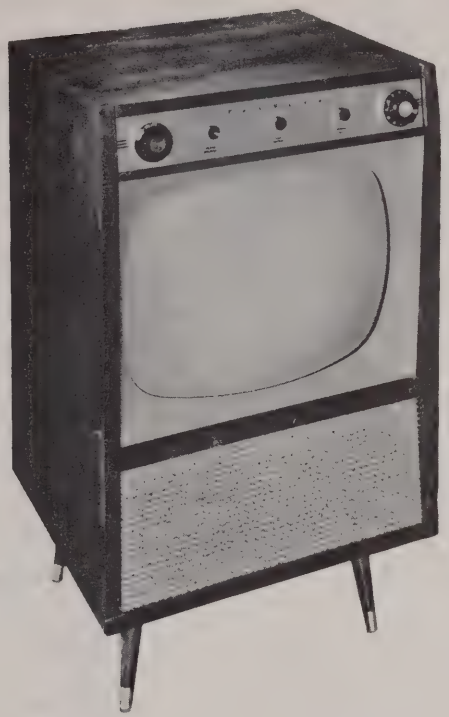
TRAV-LER MODELS 621-20, -21, -22, -25, -26 (Ch. 412M6)



DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 7 push-on type control knobs from front panel of cabinet.

2. Remove 7 wood screws and 3 metal screws. Remove rear cover.

3. Remove picture tube socket, HV lead yoke plug and speaker leads.

4. Remove 3 wood screws holding chassis with mounting board. Remove chassis.

5. Remove 8 speaker nuts. Remove 2 speakers.

MODEL	CHASSIS
621-25	412M6

TRAV-LER MODELS 621-20, -21, -22, -25, -26 (Ch. 412M6)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removing the channel selector and fine tuning knobs.

PICTURE TUBE SAFETY GLASS CLEANING

For picture tube safety glass cleaning, it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator can be made from the rear panel of the chassis. Adjust the horizontal hold slug until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (A10) located on top of the chassis for maximum sound and minimum buzz.

FUSES

Two fuses are used. One for horizontal sweep circuit protection and one for LV power supply protection. (For location, see tube placement chart) .

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

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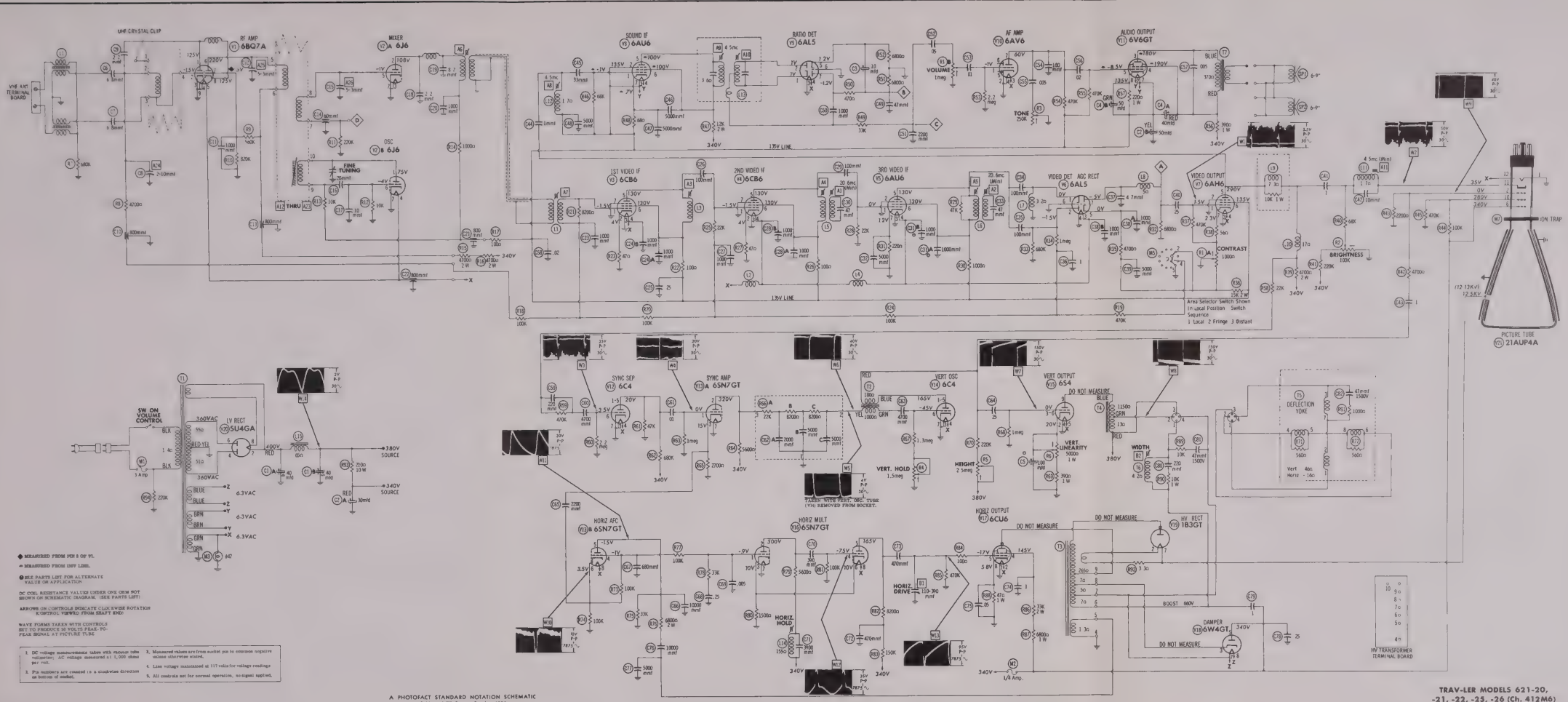

◆ MEASURED FROM PIN 8 OF V1.

⇔ MEASURED FROM UHF LUG.

● SEE PARTS LIST FOR ALTERNATE VALUE ON APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM. (SEE PARTS LIST)

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION CONTROL VIEWED FROM SHAFT END)

WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 30 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE

1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction as bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings
5. All controls set for normal operation, no signal applied.

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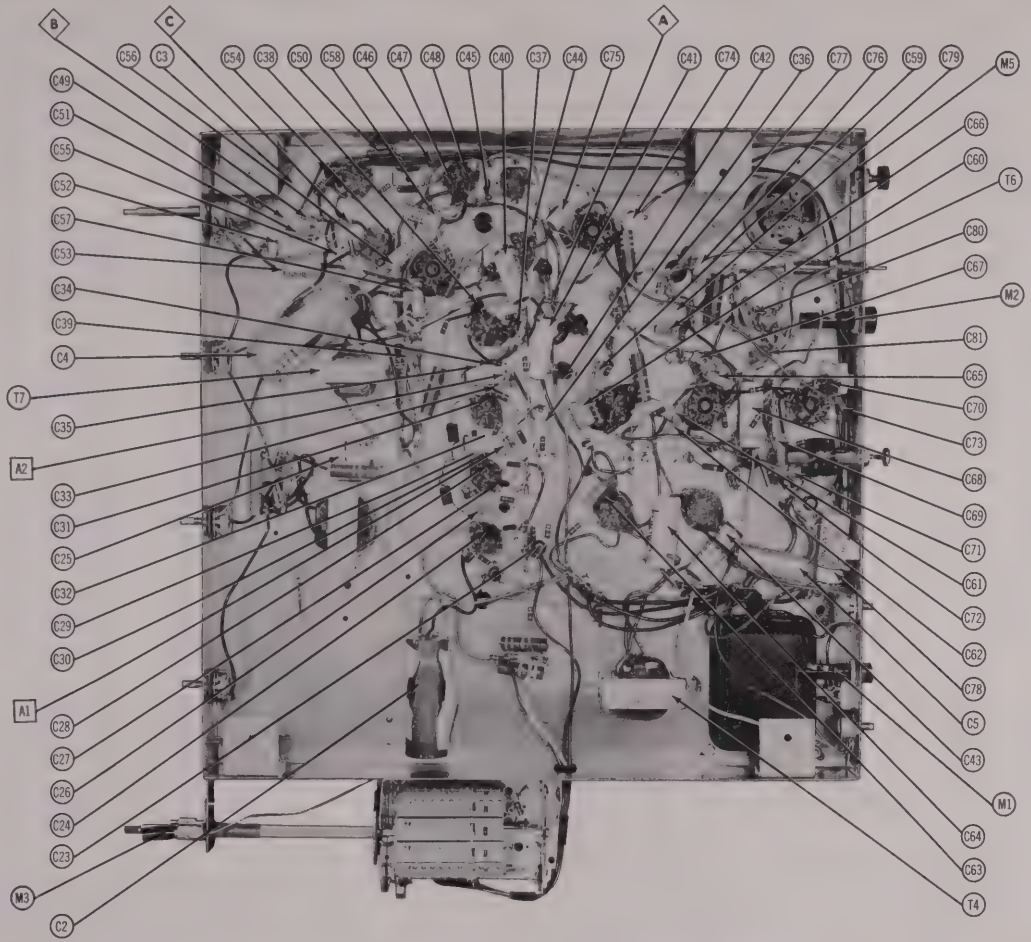
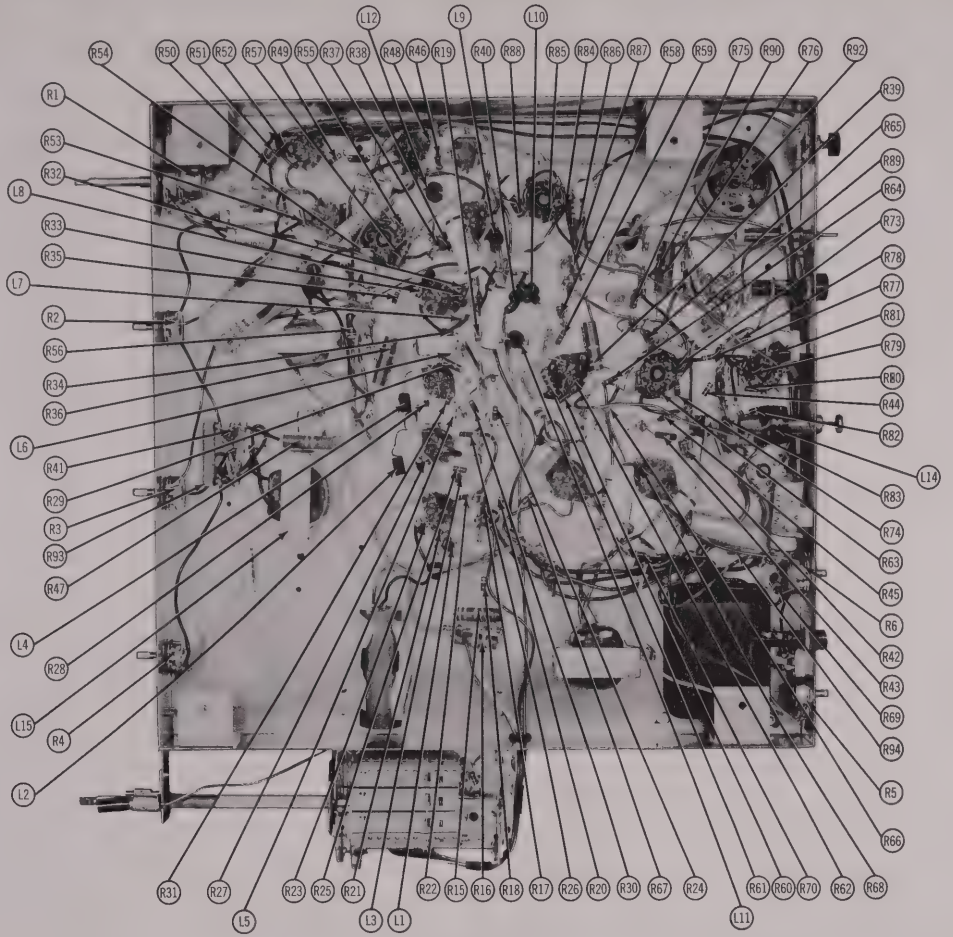
TRAV-LER MODELS 621-20, -21, -22, -25, -26 (Ch. 412M6)

TRAV-LER MODELS 621-20, -21, -22, -25, -26 (Ch. 412M6)

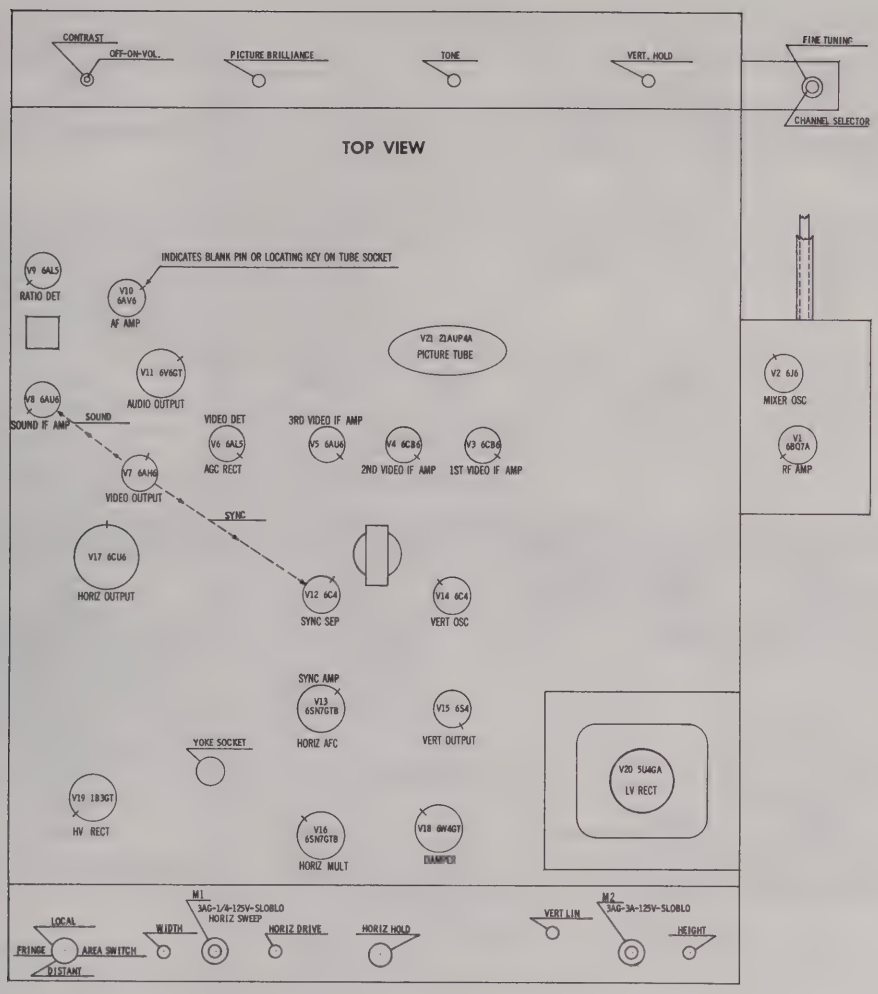


CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TUBE PLACEMENT CHART



PROPERTY OF
L. F. [illegible]
[illegible] ST
DENVER, COLORADO

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - **V20, Fuse (M1)**

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V2, V3, V4, V5, V6, V7, V11**
No pic, no sound, has snow - **V1, V2, V3**
No pic, has sound, has raster - **V7, V21**
Has pic, no sound - **V8, V9, V10, V11**

SYNC FAILURE
No vert. sync - **V13, V14**
No horiz. sync - **V13, V16**
No vert. or horiz. sync - **V12, V13**

SWEEP FAILURE
No raster, has sound - **V16, V17, V18, V19, V21, Fuse (M2)**
No vertical deflection - **V14, V15**
Poor vert. linearity or foldover - **V14, V15**
Poor horiz. linearity or foldover - **V16, V17, V18**
Narrow picture - **V16, V17, V18, V19, V20**
Vert. off freq. - **V13, V14**
Horiz. off freq. - **V13, V16**

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube (V16) to disable the high voltage.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt bias supply to the ungrounded side of C36. Positive to chassis. Remove the converter tube V2 from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to pin 1 (grid) of 6CB6 (V3). Low side to chassis.	Not used	20.6MC (Unmod)	12	USE VTVM. DC probe to point (A). Common to chassis.	A1, A2	Adjust for MINIMUM deflection.
2.	"	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	20.6MC 21.75MC 22.75MC 26.25MC	Any	Vert. Amp. thru 10K to point (A). Low side to chassis.	A3, A4, A5, A6, A7	If necessary, reduce bias to 1.5 volts to obtain usable pattern on scope. Adjust A3 thru A7 to obtain response similar to Fig.1. A3 affects the video side of the response curve and A4 affects the audio side. A5 affects the intermediate range of response curve. Adjust A6 and A7 for proper symmetry flatness and band width.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
3.	Direct	High side to point (A). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point (B). Common to chassis.	A8, A9	Adjust for maximum deflection.
4.	"	"	"	"	DC probe to point (C). Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A8, A9	Disconnect stabilizing capacitor (C3). Adjust for curve of maximum amplitude and symmetry similar to Fig. 2.
4.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A10	Reconnect C3. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 3. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT

Set contrast control for maximum.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	Direct	High side to point (A). Low side to chassis.	4.5MC (Unmod)	Any	DC probe thru detector (Fig.4) to pin 11 (cathode) of picture tube. Common to chassis.	A11	Adjust for MINIMUM deflection.

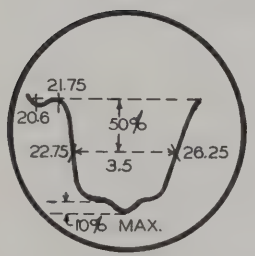


FIG. 1

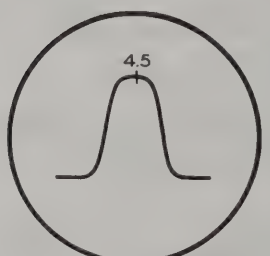


FIG. 2

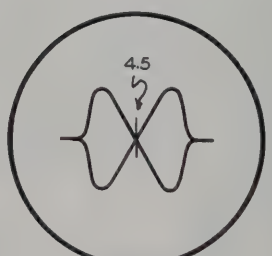


FIG. 3

ALIGNMENT INSTRUCTIONS (cont)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket. The channel oscillator screws are reached through a hole just below and to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 47K to point (A). Low side to chassis.	A12	Adjust to place sound marker in trap notch as in Fig. 5. Video marker should fall at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A13	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A14	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A15	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A16	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A17	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A18	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A19	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A20	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A21	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A22	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A23	

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10K to point (D). Low side to chassis.	A24, A25, A26	Adjust for response curve similar to Fig. 6 with markers above 90%.
8.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 6. If markers fall below 70% on any channel, make compromise adjustments of A24, A25 and A26 with channel switch set to that channel. Check all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

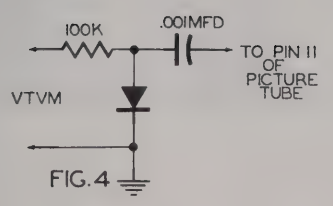


FIG. 4

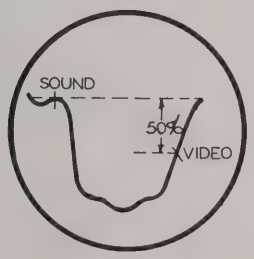


FIG. 5

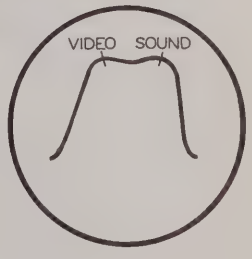


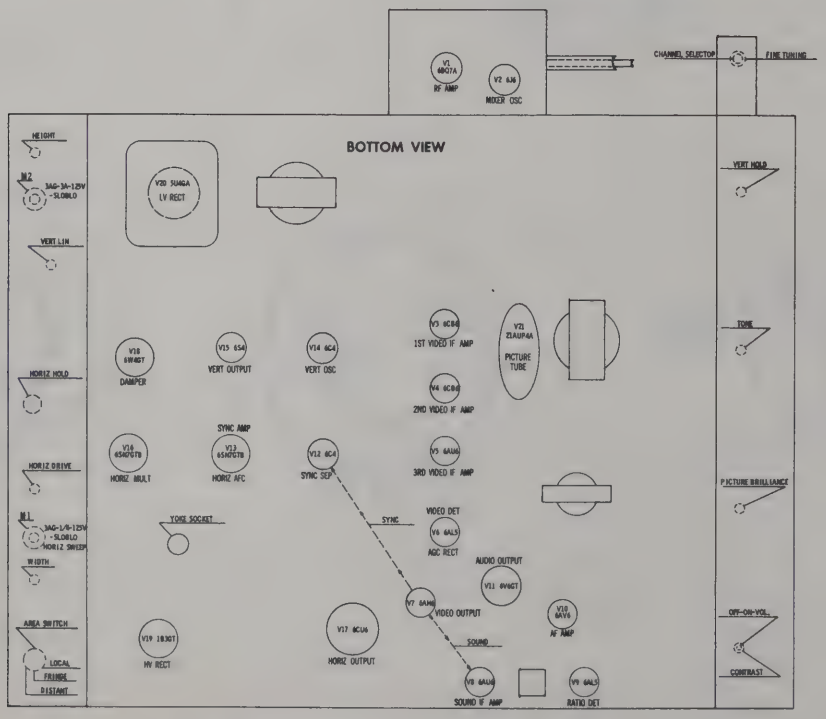
FIG. 6

RESISTANCE MEASUREMENTS

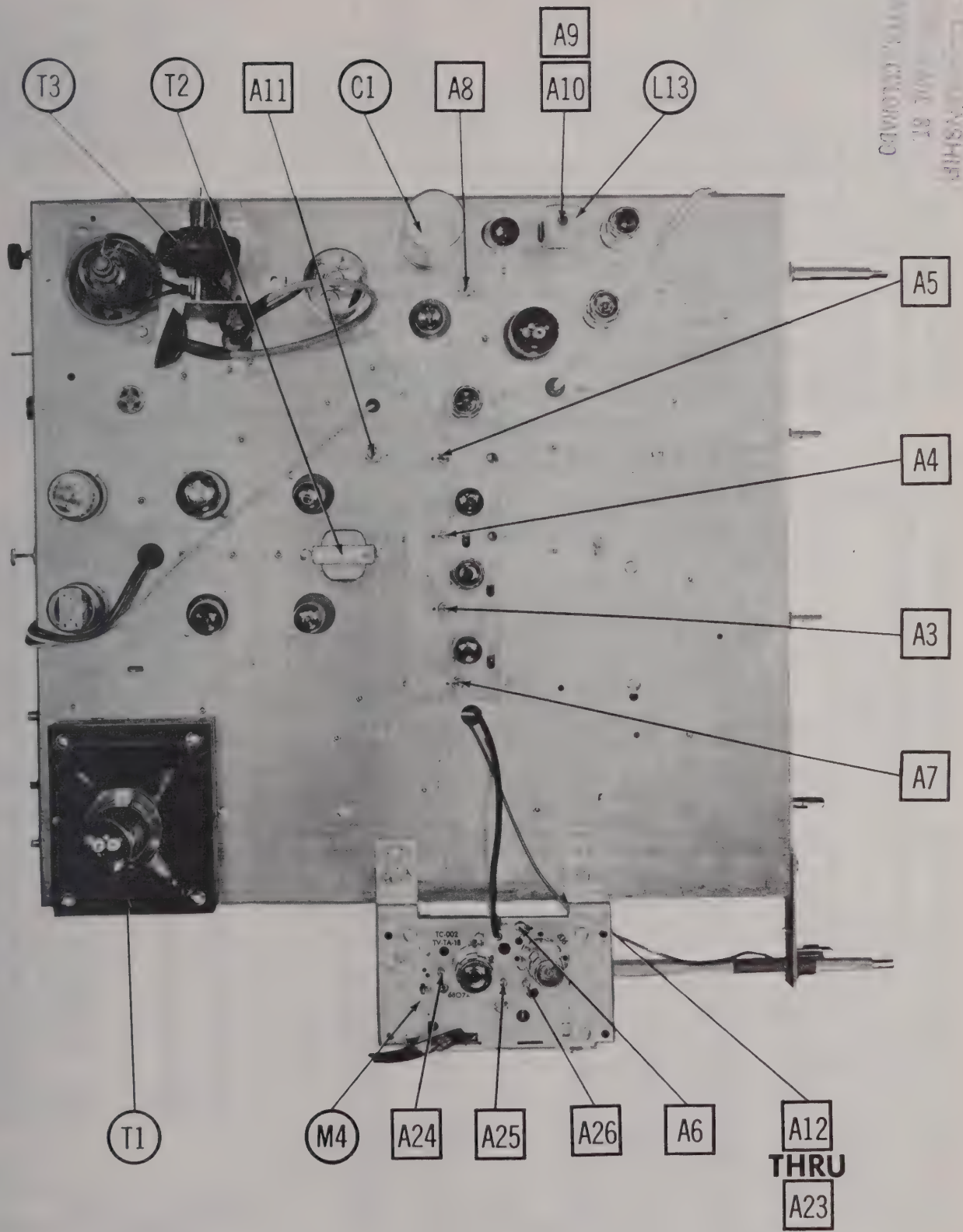
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BQ7A	INF	2Meg	0Ω	0Ω	.1Ω	†9500Ω	350K	INF	0Ω
V2	6J6	■10K	■1000Ω	0Ω	.1Ω	220K	10K	0Ω		
V3	6CB6	2Meg	47Ω	0Ω	.1Ω	■100Ω	■100Ω	0Ω		
V4	6CB6	2Meg	47Ω	0Ω	.1Ω	■100Ω	■100Ω	0Ω		
V5	6AU6	22K	0Ω	0Ω	.1Ω	■1000Ω	■1000Ω	220Ω		
V6	6AL5	3.2Ω	680K	.1Ω	0Ω	4700Ω	0Ω			
V7	6AH6	470K	0Ω	0Ω	.1Ω	†5000Ω	15K	●160Ω		
V8	6AU6	68K	15K	15K	15K	†12K	†12K	■68Ω		
V9	6AL5	INF	INF	0Ω	.1Ω	6800Ω	0Ω	7300Ω		
V10	6AV6	2.2Meg	0Ω	.1Ω	0Ω	NC	NC	■470K		
V11	6V6GT	NC	15K	†1000Ω	†650Ω	470K	TP	15K	■220Ω	
V12	6C4	†150K	TP	0Ω	.1Ω	†150K	2.2Meg	0Ω		
V13	6SN7GT	1Meg	†5800Ω	2700Ω	200K	33K	100K	0Ω	.1Ω	
V14	6C4	●†900K	NC	0Ω	.1Ω	●†900K	●1.5Meg	0Ω		
V15	6S4	NC	●1200Ω	1Meg	0Ω	.1Ω	1Meg	NC	NC	†1200Ω
V16	6SN7GT	300K	†5800Ω	1500Ω	100K	†160K	1500Ω	0Ω	.1Ω	
V17	6CU6	NC	.1Ω	NC	†40K	470K	TP	0Ω	47Ω	Top Cap ▲7Ω
V18	6W4GT	NC	NC	INF	NC	†275Ω	NC	INF	INF	
V19	1B3GT	PINS 1-8 HAVE INFINITE RESISTANCE								Top Cap ▲270Ω
V20	5U4GA	INF	90K	INF	51Ω	INF	55Ω	INF	90K	
V21	21AUP4A	0Ω	2200Ω	Pin 6 †65Ω	Pin 10 †70K	Pin 11 †180K	Pin 12 .1Ω			

† MEASURED FROM PIN 2 OF V20.
■ MEASURED FROM 135 VOLT LINE.
▲ MEASURED FROM PIN 3 OF V18.

● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
TP TIE POINT
NC NO CONNECTION



TUBE PLACEMENT CHART



CHASSIS TOP VIEW

SET 334 FOLDER 10

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amp.	6BQ7A	
V2	Mixer-Osc	6J6	
V3	1st Video IF Amp.	6CB6	
V4	2nd Video IF Amp.	6CB6	
V5	3rd Video IF Amp.	6AL5	
V6	Video Det & AGC Rect.	6AL5	
V7	Video Output	6AH6	
V8	Sound IF Amp.	6AL5	
V9	Ratio Det	6AL5	
V10	AF Amp.	6AV6	
V11	Audio Output	6V6GT	
V12	Sync Sep.	6C4	
V13	Sync Amp.-Horiz. AFC	6CM8	
V14	Vert Osc	6C4	
V15	Vert Output	884	
V16	Horiz. Mult.	6DN7GT	
V17	Horiz. Output	6CL6	
V18	Damper	6W4GT	
V19	HV Rectifier	1B3GT	
V20	1.V Rectifier	5U4GA	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	CBS Tube Part No.	GENERAL ELECTRIC Part No.	SYLVANIA Part No.		
V21	21AUP4A 1	21AUP4A 1)	21AUP4A	1) Aluminized 2) Silver Screen "85"	
	21AUP4A	21AUP4A, B 1)	21AUP4A B 2)		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP	VOLT	Trav-Ler Part No.	AEROVOX Part No.	CORNELL DUBILIER Part No.	MALLORY Part No.	PYRAMID Part No.	SANGAMO Part No.	SPRAGUE Part No.
C1A	440	450	TV-EC-16	AFH2-57	BQ45	FP238	TMD-54	D-235	TVL-3766
B	440	450							
C2A	50	450	TV-EC-25	PRS450V5030	BR3045	TCD2303		T-780	R1546*
B	50	200			BR5025				
C3	50	50	TV-EC-30	PRS50V10	BR.05	TC32	TD-10-50	FM-0510	TVA-1504
C4A	40	450	TV-EC-17	PRS450V4040	BR4045	TCD3297	TD-40-450	FM-4540	R1552*
B	50	50			BR505		FM-0550	TD-50-50	
C5	100	50	Note 1	PRS50V100	BR1051	TC3501	TD-100-50	MTR-5010	TVA-1510

Note 1: Some versions may use a 25 volt unit in this application. (part #TV-EC-37)
*Non-catalog item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP	VOLT	Trav-Ler Part No.	AEROVOX Part No.	CENTRALAB Part No.	CORNELL DUBILIER Part No.	ERIE Part No.	MALLORY Part No.	SPRAGUE Part No.	
C6	6 8			NPO-D15 6	TCZ-6S8	D15	NPOA-6S8	ZT-5S68	5TCCB-V68	
C7	8 8			NPO-D15 8	TCZ-6S8	D15	NPOA-6S8	ZT-5S88	5TCCB-V88	
C8	3-10				828-10					
C9	2 2									
C11	5 6									
C12	1000			BPD-001	DD-102	E069	801-001	DCS21	5HK-D1	
C12	3-3						3115-01-0R5	CT585A		
C13	300									
C14	50									
C15	3-3						3115-01-0R5	CT585A		
C16	20			NP6-D120	TCN-20	2025	NT50K-S20		5TCU-Q2	
C17	50									
C18	2 2			NPO-S12 2	TCZ-2R2	2006	NPOA-2R2		5TCCB-V22	
C19	8.7			NPO-D18 2		2018	NPOA-2R2			
C20	300			BPD-001	DD-103	E069	801-001	DCS21	5HK-D1	
C21	1000									
C22	600									
C23	3,000		TV-CC-3	BPD-001	DD-103	E069	801-001	DCS21	5HK-D1	
C24A	1000		TV-CC-1	BPD-2X001	DD3-102	DE069	813-001	DCD521	5HK-2D1	
B	1000									
C25	.25	600		P38N-25		CUB3P5		PT4025	2TM-P25	
C28	500		TV-CC-5	SD50	D5-101	TP54	GPUK-101	UC-531	5GA-T1	
C27	1000		TV-CC-3	BPD-001	DD-103	E069	801-001	DCS21	5HK-D1	
C28A	1000		TV-CC-1	BPD-2X001	DD3-102	DE069	813-001	DCD521	5HK-2D1	
B	1000									
C29	.00		TV-CC-5	SD50	D5-101	TP54	GPUK-101	UC-531	5GA-T1	
C30	47		TV-CC-17	BPD-047	D4-470	TZ33	831-470	ZT-5447	5TCC-Q47	
C31A	1000		TV-CC-1	BPD-2X001	DD2-102	DE069	813-001	DCD521	5HK-2D1	Note 2
B	1000									Note 3
C32	5000		TV-CC-3	DPD-005	DD-502	E080	811-005		DCS25	
C33	47		TV-CC-13	NPO-4S47	D6-470	TZ33	831-470	ZT-5447	5TCC-Q47	
C34	100		TV-CC-5	SD50	D5-101	TP54	GPUK-101	ZT-531	5GA-T1	
C35	100		TV-CC-5	SD50	D5-101	TP54	GPUK-101	ZT-531	5GA-T1	
C36	1	200	TV-CC-15	P38N-1	TC4-1R0	TZP1		ZT-5410	5TCC-T10	
C37	4.7		TV-CC-15	NPO-4S4.7	TC2-4R7	TZ07	NP0A-4R7	ZT-5547	5TCCB-V47	
C38A	1000		TV-CC-1	BPD-2X001	DD-102	DE069	813-001	DCD521	5HK-2D1	
B	1000									
C39	5000		TV-CC-3	BPD-005	DD-502	E080	811-005	DCS25	5HK-D5	
C40	39	300	TV-CC-4	P38N-25		CUB3P25		PT4025	2TM-P25	
C41	1	500	TV-CC-16	P38N-1	DF-104	CUB6P1		PT601	6TM-P1	
C42	47		TV-CC-17	NPO-4S10	TCZ-10	TZ09	NP0A-100	ZT-5447	5TCC-Q47	
C43	1	600	TV-CC-16	P68N-1	DF-104	CUB6P1		PT601	6TM-P1	
C44	1			NPO-4S1	TC2-1	TZ05	NP0A-S10		5TCCB-V1	
C45	33			SD33	D5-330	TP37	GPUK-330	UC-5433	5GA-Q33	
C46	5000		TV-CC-3	BPD-005	DD-502	E080	811-005	DCS25	5HK-D5	
C47	5000		TV-CC-3	BPD-005	DD-502	E080	811-005	DCS25	5HK-D5	
C48	5000		TV-CC-3	BPD-005	DD-502	E080	811-005	DCS25	5HK-D5	
C49	47		TV-CC-17	NPO-4S47	D6-470	TZ33	831-470	ZT-5447	MG-41	
C50	1000		TV-CC-7	SU100	D6-102	TP53	GPSL-102	UC-531	5GA-D1	
C51	1200	500	TV-MC-11	1464-0032		1RSD21			MS-222	
C52	05	400		BPD-08	DF-503	CUB4S5		PT415	4TM-S5	
C53	01	600	TV-PC-15	BPD-01	D4-103	CUB6S1	GP3-333-103	PT601	6TM-S1	
C54	100	500	TV-CC-5	SD50	D5-101	TP54	GPUK-101	UC-531	5GA-T1	
C55	005	600	TV-PC-10	BPD-005	D6-502	CUB6D5	GP3-333-502	PT625	6TM-D5	
C56	02	600	TV-PC-10	BPD-02	D6-203	CUB6D2	817-02	PT612	6TM-D2	
C57	005	600	TV-PC-10	BPD-005	D6-502	CUB6D5	GP2-333-502	PT625	6TM-D5	
C58	02	600	TV-PC-10	BPD-02	DF-203	CUB6S2	817-01	PT612	6TM-S2	
C59	220	500	TV-MC-21	SU220	D5-221	TP53	GPSK-221	UC-5332	1FM-332	
C60	4700	500		BPD-0047	D5-472	1WSD47	GP2-333-475	UC-5247	1FM-247	
C61	01	600	TV-PC-15	BPD-01	D6-103	CUB6S1	GP3-333-103	PT601	6TM-S1	
C62A	1000								DCS22	
B	5000		TTV-CC-26	TPA-10	TPC-100	TUSTM1	T1605-01		DCS25	TTV-1
C	5000								DCS25	/
C63	4700	500		1464-0047		1RSD47			MS-247	
C64	25	600		P68N-25		CUB6P25		PT6025	6TM-P25	
C65	2200	500	TV-MC-11	1464-0022		1RSD22			MS-222	
C66	01	600		BPD-01	D6-103	E043	81U-01	DC511	5HK-S1	
C67	680	500	TV-MC-15	1464-00068	D5-681	SRS7S8	81-681		MS-388	
C68	25	300	TV-PC-4	P38N-25		CUB2P25		PT4025	2TM-P25	
C69	005	600	TV-PC-10	BPD-005	D6-502	CUB6D5	GP3-333-502	PT625	6TM-D5	

CAPACITORS (cont)

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP	VOLT	Trav-Ler Part No.	AEROVOX Part No.	CENTRALAB Part No.	CORNELL DUBILIER Part No.	ERIE Part No.	MALLORY Part No.	SPRAGUE Part No.	
C70	390	500				D6-391	SRS739	81U-391	MS-339	
C71	3900	500	TV-MC-12	1464-0039			1RSD39		MS-239	
C72	470	500		1464-00047		D6-471	SRS7S7	81U-471	MCR643	
C73	470	500		1464-00047		D6-471	SRS7S7	81U-471	MCE345	
C74	1	600	TV-PC-16	P68N-1		DF-104	CUB6P1		PT601	
C76	05	400		BPD-05		DF-503	CUB4S5		PT415	
C78	1000			BPD-01		DD-103	K082	81U-01	DC511	
C77	5000		TV-CC-3	BPD-005		DD-502	K080	81U-005	DCS25	
C79	25	600		P68N-25			CUB6P25		PT6025	
C79	1	600	TV-PC-16	P68N-1		DF-104	CUB6P1		PT601	
C80	220	500	TV-MC-3	SU220		D5-221	SWS732	GP2K-221	UC-5323	
C81	47	1500		HVD-15-47		DD30-470	V2Q47	1RSKV-470	DC30447	
C82	47	1500		HVD-15-47		DD30-470	V2Q47	1RSKV-470	DC30447	

† Items C82A, C82B, C82C, R66A, R66B and R66C are combined in one unit.
Note 2: Some versions may use an individual unit (part #TV-CC-3) in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Trav-Ler Part No.	CENTRALAB Part No.	CLAROSTAT Part No.	IRC Part No.	MALLORY Part No.	
R1A	1,000Ω		VC-60	F1-6		*QJ-358	UF13L	Contrast (Panel)
B	1Meg			R2-53			UR16A	Volume (Panel)
C	Switch			KB-1			UB-36	Attach to R1B
R2A	100K		VC-52	AB-40	A47-100K-B	Q11-138	TA18L	Brightness
B	Shaft		Not Req.	AK-4	KSB-2	Not Req.	Not Req.	Attach to R3A
R3A	250K		VC-78	AB-51			U46	Tone
B	Shaft		Not Req.	AK-4		Not Req.	Not Req.	Attach to R3A
R4A	1.5Meg		TV-VC-53	AB-743	A47-1.5Meg-S	Q11-139	TA18SL	Vert. Hold
B	Shaft		Not Req.	AK-4	KSB-2	Not Req.	Not Req.	Attach to R4A
R5A	2.5Meg		TV-VC-59	BX-83	A47-2.5Meg-S	Q11-339	TA35L	Height
B	Shaft		Not Req.	AK-4	KSB-2	Not Req.	Not Req.	Attach to R5A
R6A	5000Ω		TV-VC-39	VK-136	A43-5000	WP85000	R5000L	Vert. Linearity
B	Shaft		Not Req.	Not Req.	FX3-1/4	Not Req.	Not Req.	Attach to R6A

* Concentrikit Equivalent: K-3 Kit, Base Elements & Shafts: B1-108 & P1-204 (Panel), B13-127 & R3-216 (Rear)
T6-1 Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	OHMS	WATT	Trav-Ler Part No.	IRC Part No.		
R7	680K			BTS-680K		
R8	470Ω			BTS-4700		
R9	390K			BTS-390K		
R10	820K			BTS-820K		
R11	330K			BTS-330K		
R12	10K					
R13	10K			BTS-10K		
R14	1000Ω			BTS-1000		
R15	470Ω	3		BTS-4700		
R16	4700Ω	3		BTS-4700		
R17	100Ω		TV-RR-104	BTS-100		
R18	100K		TV-RR-43	BTS-100K		
R19	470K		TV-RR-11	BTS-470K		
R20	100K		TV-RR-43	BTS-100K		
R21	820Ω			BTS-820		
R22	100Ω		TV-RR-104	BTS-100		
R23	47Ω		TV-RR-97	BTS-47		
R24	47Ω		TV-RR-97	BTS-47		
R25	100K		TV-RR-43	BTS-100K		
R26	47K		TV-RR-66	BTS-47K		
R27	100Ω			BTS-1000		
R31	220Ω			BTS-220		
R32	68000Ω		TV-RR-78	BTS-6800		
R33	68000Ω			BTS-6800		
R34	1Meg		TV-RR-105	BTS-1Meg		
R35	4700Ω			BTS-4700		
R36	15K	3		BTS-15K		
R37	470K		TV-RR-11	BTS-470K		
R38	56Ω		TV-RR-113	BTS-56		
R39	4700Ω	3		BTS-4700		
R40	68K		TV-RR-51	BTS-68K		
R41	220K		TV-RR-91	BTS-220K		
R42	4700Ω		TV-RR-97	BTS-4700		
R43	22000		TV-RR-87	BTS-2200		
R44	100K		TV-RR-43	BTS-100K		
R45	470K		TV-RR-11	BTS-470K		
R46	68K		TV-RR-51	BTS-68K		
R47	15K	3		BTS-15K		
R48	68Ω			BTS-68		
R49	33K		TV-RR-99	BTS-33K		
R50	470Ω		TV-RR-6	BTS-470		
R51	68000		TV-RR-78	BTS-6800		

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	Trav-Ler Part No.	IRC Part No.	
R52	6800Ω		TV-RR-78	BTS-6800	
R53	2.2Meg		TV-RR-13	BTS-2.2Meg	
R54	470K		TV-RR-11	BTS-470K	
R55	470K		TV-RR-11	BTS-470K	
R56	330Ω			BTA-330	
R57	220Ω	1		BTA-220	
R58	33K		TV-RR-46	BTS-33K	
R59	470K		TV-RR-11	BTS-470K	
R60	2.2Meg		TV-RR-13	BTS-2.2Meg	
R61	47K		TV-RR-66	BTS-47K	
R62	680K			BTS-680K	
R63	1Meg		TV-RR-105	BTS-1Meg	
R64	5600Ω			BTS-5600	
R65	2700Ω			BTS-2700	
R66A	33K			BTS-33K	
B	8200Ω		†TV-CC-26	BTS-8200	
C	8200Ω			BTS-8200	
R67	1.5Meg 5%			BTS-1.5Meg 5%	
R68	1Meg		TV-RR-105	BTS-1Meg	
R69	390Ω	1		BTA-390	
R70	220K		TV-RR-91	BTS-220K	
R71	560Ω				
R72	560Ω				
R73	100K		TV-RR-43		
R74	100K		TV-RR-43		
R75	33K		TV-RR-58		
R76	6800Ω	3			
R77	100K		TV-RR-43		
R78	33K		TV-RR-58		
R79	5600Ω 5%				
R80	15000				
R81	100K		TV-RR-43		
R82	33000		TV-RR-60		
R83	180K		TV-RR-96		
R84	100Ω		TV-RR-104		
R85	470K		TV-RR-11		
R86	33K	3			
R87	68000	1			
R88	47Ω	1			
R89	10K		TV-RR-64		
R90	100				
R91	1000Ω				
R92	3.3Ω			BW§-3.3	
R93	210Ω	10		1.3/4A-300	
R94	220K		TV-RR-91	BTS-220K	

† Items R66A, R66B, R66C, C82A, C82B and C82C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	SEC. 3	Trav-Ler Part No.	Halldorson Part No.	Merit Part No.	Stancor Part No.	Thordarson Part No.	Triad Part No.
T1	117VAC @1.8A	760VCT @.200A	5V @2A	6.3V @.75A	TV-TR-13					
			810V, 4 @.250A	SEC. 5 6.3V @1.2A						

① Drill one new mounting hole.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA						NOTES
	PRI.	SEC	Trav-Ler Part No.	MEISSNER Part No.	MERIT Part No.	MILLER Part No.	RCA TYPE No.	Thordarson Part No.	
L14	165Ω		TV-L-18	19-1978*	TV-185*	6210*		HB-5*	

* Drill new mounting hole.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 ℃/s	Trav-Ler Part No.	Halldorson Part No.	Merit Part No.	Stancor Part No.	Thordarson Part No.	Triad Part No.
L15	.200A	66Ω	2.43H	TV-FC-1	C-5030 ①	C-3301 ①	C-3325 ①	30C43	C-17X ①

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Trav-Ler Part No.		LITTELFUSE Part No.		BUSS Part No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG 5/8	3A 125V			313003 (3AG-6/5-3A)	341001	MDX3	HXP
M2	3AG 5/8	1/4A 125V			313.250 (3AG-6/5-1/4A)	341001	MDL 1/4	HKP

MISCELLANEOUS

ITEM No.	PART NAME	Trav-Ler Part No.	NOTES
M3	Dial Light		#47
M4	Tuner	TA-18	VHF
M5	Switch		Area Selector (UP - 3 Position; Rotary, Wafer Type)
M6	Centering Device		Part of Deflection Yoke (T5) Rear Cover
M7	Ion Trap		
B1	Trimmer Cap.	TC-11	Horiz. Drive (10-300MMF)

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA						
		Trav-Ler Part No.	Halldorson Part No.	Merit Part No.	RCA TYPE No.	Ram Part No.	Stancor Part No.	Thordarson Part No.	Triad Part No.
T2	Vert. Osc. Trans.	TV-TR-10	B6708	A-3003	209T1 1)	V405	A-8125	26A03	A-97X
T3	Horiz. Output Trans.	TV-TR-18		BVO-03* 2)		X130* 2)	A-8372* 1) 2)	P1Y-54* 1) 2)	
T4	Vert. Output Trans.	TV-TR-8	21804	A-3037	222T1	V313	A-8123	26D52	A-103X
T5A	Yoke-Horiz(GMH)	TV-L-52	DF601 2)	MVF-70 2)	208J1 2)	TY0P10/43 2)	DY-2A 2)	DY-5 6 2)	Y-T-1- 2)
B	Vert(SMH)								
T6	Width Coil (-6L4GMH)		BP804	MWC-3	206H1	B01B2A	WC-7	WC-18 ①	WC-13 ①

1) Drill new mounting hole(s).
2) Use original mounting bracket.
3) Use original term board.
4) Requires new centering device.
5) Connect horiz. damping network across terms #3 and #7. Use original if necessary.
6) Use original yoke damping network.
7) Do not use tap.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
9		9	2	Red		
8		Jumper 8 & 7	7	Jumper Blue & White		
7		8	6	Brown		
6		5	3	Green		
5		4	4	Black		
4		3	5	Yellow		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	Trav-Ler Part No.	Halldorson Part No.	Merit Part No.	Stancor Part No.	Thordarson Part No.	Triad Part No.	
T7	5.7K	5Ω	TV-AT-17	Z1007	A-3019	A-3849	26B49	S-52	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V C IMP	Trav-Ler Part No.	QUAM Part No.	RCA TYPE No.	
SP1	6"X 9"	PM	3-4Ω	TV-SPK-45	69A2	23B81	
SP2	6"X 9"	PM	3-4Ω	TV-SPK-45	69A2	23B81	

COILS (RF-IF)

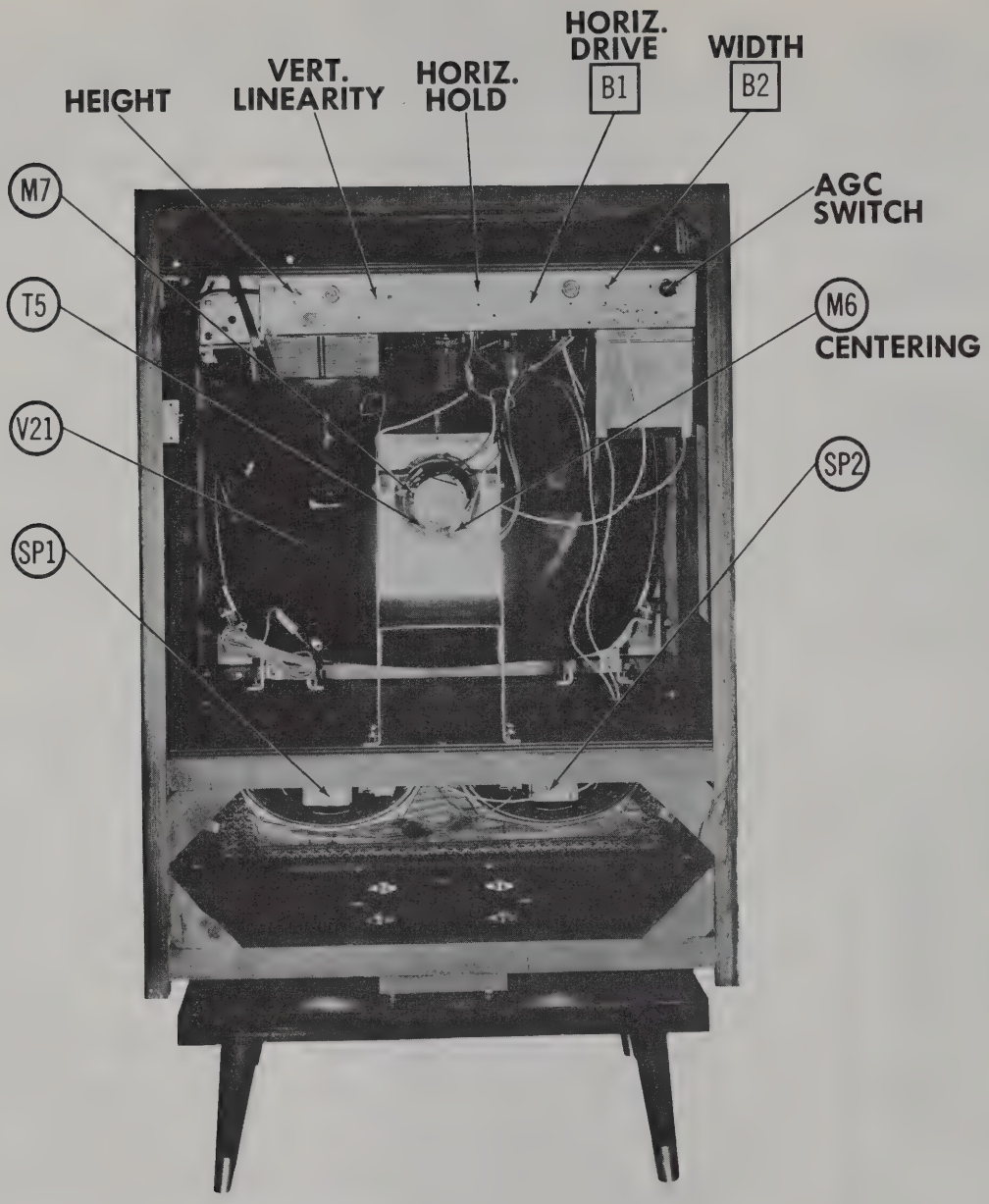
ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC	Trav-Ler Part No.	MEISSNER Part No.	MERIT Part No.	MILLER Part No.	
L1	1st Video IF	10	.6Ω	TV-L-38				
L2	Pix. Choke	0Ω		TV-L-23	19-1001		4804	1.4 Microhenries
L3	2nd Video IF	.4Ω		TV-L-38				
L4	Pix. Choke	0Ω		TV-L-23	19-1001		4804	1.4 Microhenries
L5	3rd Video IF	.4Ω		TV-L-43B				Includes 2L 25MC trap.
L6	4th Video IF	.4Ω		TV-L-43C				Includes 2L 25MC trap.
L7	RF Choke	3.3Ω		TV-L-20	19-1008		4813	11 Microhenries
L8	Series Peaking Coil	5Ω		TV-L-16	19-1100	TV-181	6177	100 Microhenries
L9	Series Peaking Coil	7.3Ω		TV-L-21	19-8180*	TV-184*	6180*	177 Microhenries, Wound on 10K, 1W resistor
L10	Shunt Peaking Coil	17Ω		TV-L-32A			6148	730 Microhenries
L11	4.5MC Trap	1.7Ω		TV-L-43B	19-1005*	TV-182*	1469*	
L12	Sound IF	1.7Ω		TV-L-16A				
L13	Ratio Det.	3.4Ω	1.7Ω CT	TV-L-17	17-5497	TV-185	6305	Tertiary winding= .8Ω

* Drill new mounting hole.
◆ Parallel with 10K, 1W resistor

TRANSFORMER (SOUND IF)

ITEM No.	DC RES.		REPLACEMENT DATA						NOTES
	PRI.	SEC	Trav-Ler Part No.	MEISSNER Part No.	MERIT Part No.	MILLER Part No.	RCA TYPE No.	Ram Part No.	Thordarson Part No.	
L16	15Ω		TV-L-18	19-1978*	TV-185*	6210*			HB-5*	

* Drill new mounting hole.



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

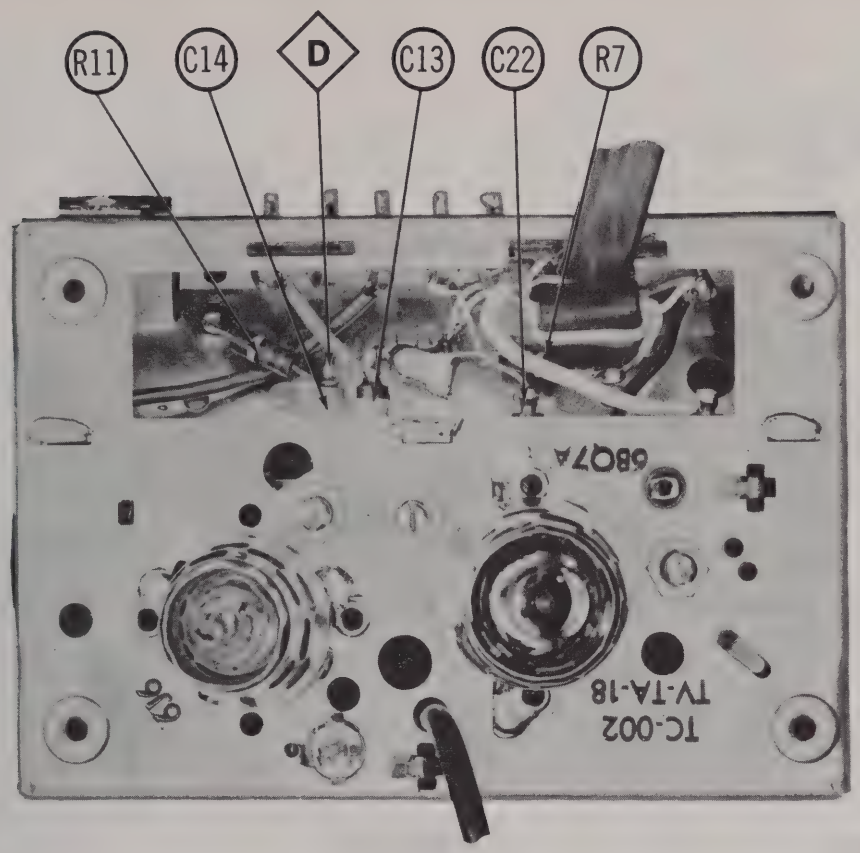
Turn the horizontal hold until the picture synchronizes horizontally.

Momentarily remove the signal by switching off channel and back again. If the picture does not pull into sync, slightly retouch the hold adjustment.

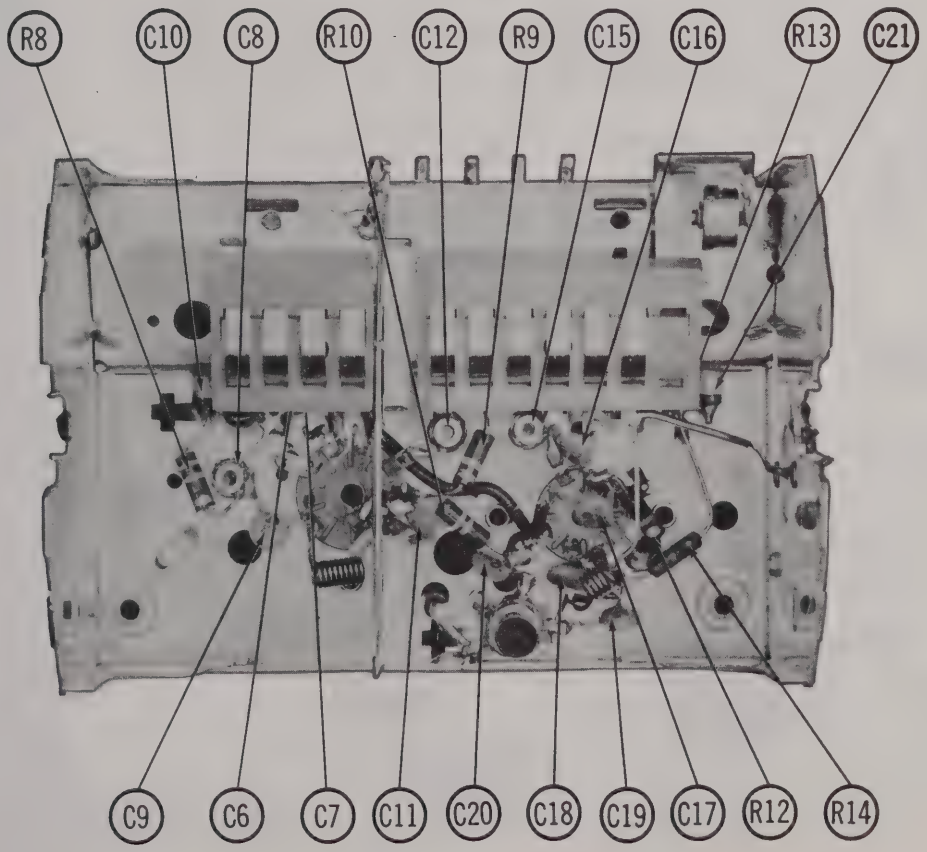
Repeat this procedure until proper sync action is obtained.

Adjust the horizontal drive trimmer (B1) counter clockwise as far as possible without the presence of vertical white lines or compression near the center of the picture.

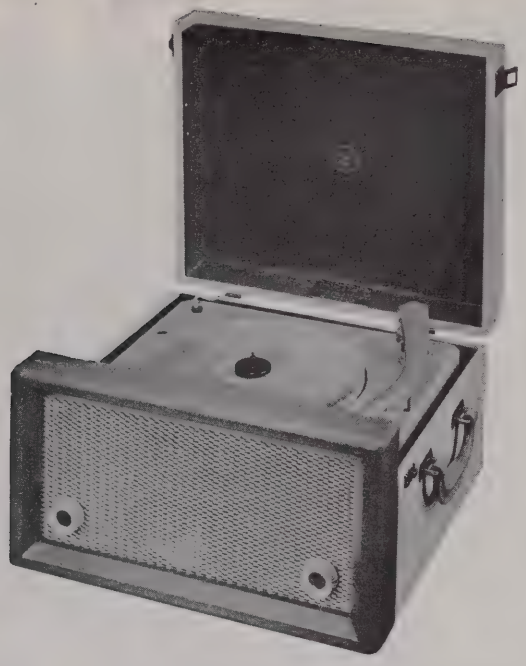
Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.



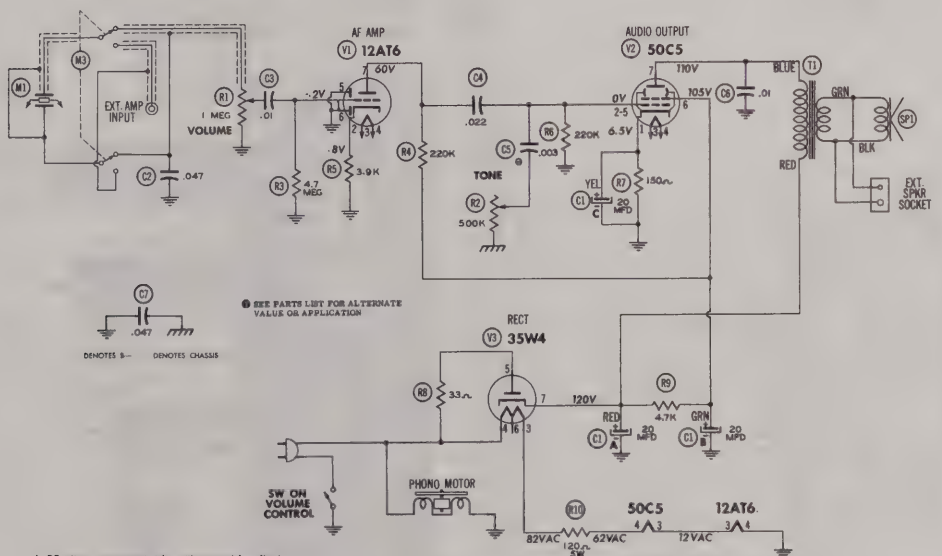
RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



TRADE NAME	V-M Model 155
MANUFACTURER	V-M Corp., Benton Harbor, Michigan
TYPE SET	AC Operated Phono Amplifier With 4 Speed Manual Record Player
TUBES (Three)	Types 12AT6 AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC-60 Cycles RATING .24 Amp. @ 117 Volts AC



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12AT6	4.7Meg	3900Ω	12Ω	0Ω	0Ω	0Ω	†225K
V2	50C5	150Ω	220K	12Ω	62Ω	220K	†47000Ω	†200Ω
V3	35W4	NC	TP	182Ω	215Ω	248Ω	210Ω	20K

ALL MEASUREMENTS WITH PHONO MOTOR DISCONNECTED.
† MEASURED FROM PIN 7 OF V3.
NC NO CONNECTION.
TP TIE POINT.

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	AF Amplifier	12AT6	
V2	Output	50C5	

ITEM No.	USE	TYPE	NOTES
V3	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	V-M PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	60	150	12007	PRS150V/ 503020	BBRT84215	TCT3117	TDLT-15	FMT-315	TVA-3455
B	20	150							
C	20	50							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	V-M PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.047	400	12009	BPD-05	DF-503	CUB4S47		PT4147	4TM-S4	
C3	.01	400	12003	BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C4	.022	400	12026	BPD-02	DD-203	CUB4S22	817-02	PT4122	4TM-S22	
C5	.003	400	12004	SI3000	D6-302	CUB6D3	GP2-333-302	PT623	6TM-D3	Note #1.
C6	.01	400	12003	BPD-01	D6-103	CUB4S1	GP3-333-103	PT411	4TM-S1	
C7	.047	400	12009	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47	

Note #1. Some versions may use .0022MFD in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	V-M PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1Meg	½	11989	AB-70	A47-1Meg-Z	Q13-137	U-53	Volume
B	Shaft		Not Req.	AK-4	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	KB-1	SWE-12	76-1	US-26	Attach to R1A
R2A	500K	½	11988	AB-60				Tone
B	Shaft		Not Req.	AK-4				Attach to R2A

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	V-M PART No.	IRC PART No.	
R3	4.7Meg		11613	BTS-4.7Meg	
R4	220K		11293	BTS-220K	
R5	3900Ω			BTS-3900	
R6	220K		11293	BTS-220K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	V-M PART No.	IRC PART No.	
R7	150Ω		10533	BTS-150	
R8	33Ω		10373	BTS-33	
R9	4700Ω		10893	BTS-4700	
R10	120Ω	5	11953	1 3/4A-125	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	V-M PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2.4K	3.4Ω	Part Of Speaker	Z1101	A-3025	A-3332	26S58 ①	S-12X	① Drill one new mtg. hole.

SPEAKER

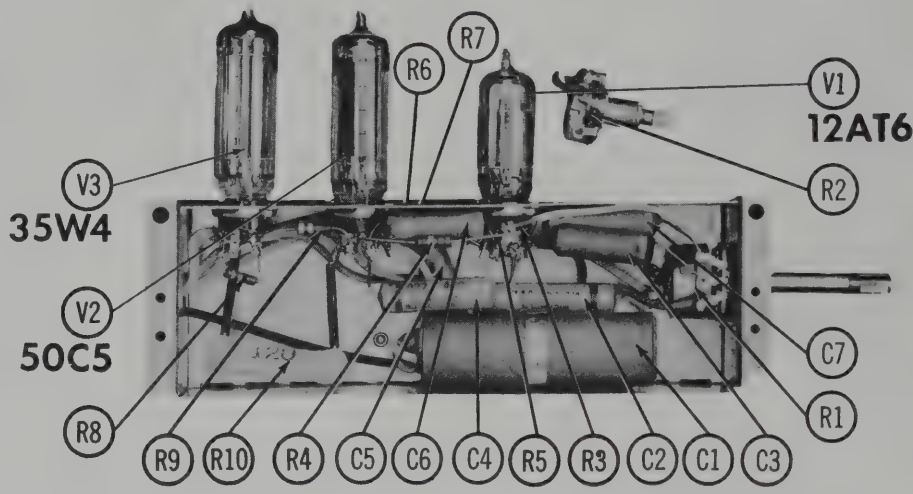
ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	V-M PART No.	QUAM PART No.	RCA TYPE No.	
SP1	4"X6"	PM	3.4Ω	9175-1	46A07	246S2	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	V-M PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		55-T	GD-J	47	0-1 or S1 and 0-3	*Complete Tone Arm and Cartridge Assembly.
		*W55-TJ		*2400 or 2447		

ASTATIC AND ELECTRO VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

CHASSIS—BOTTOM VIEW



PHONO NEEDLE

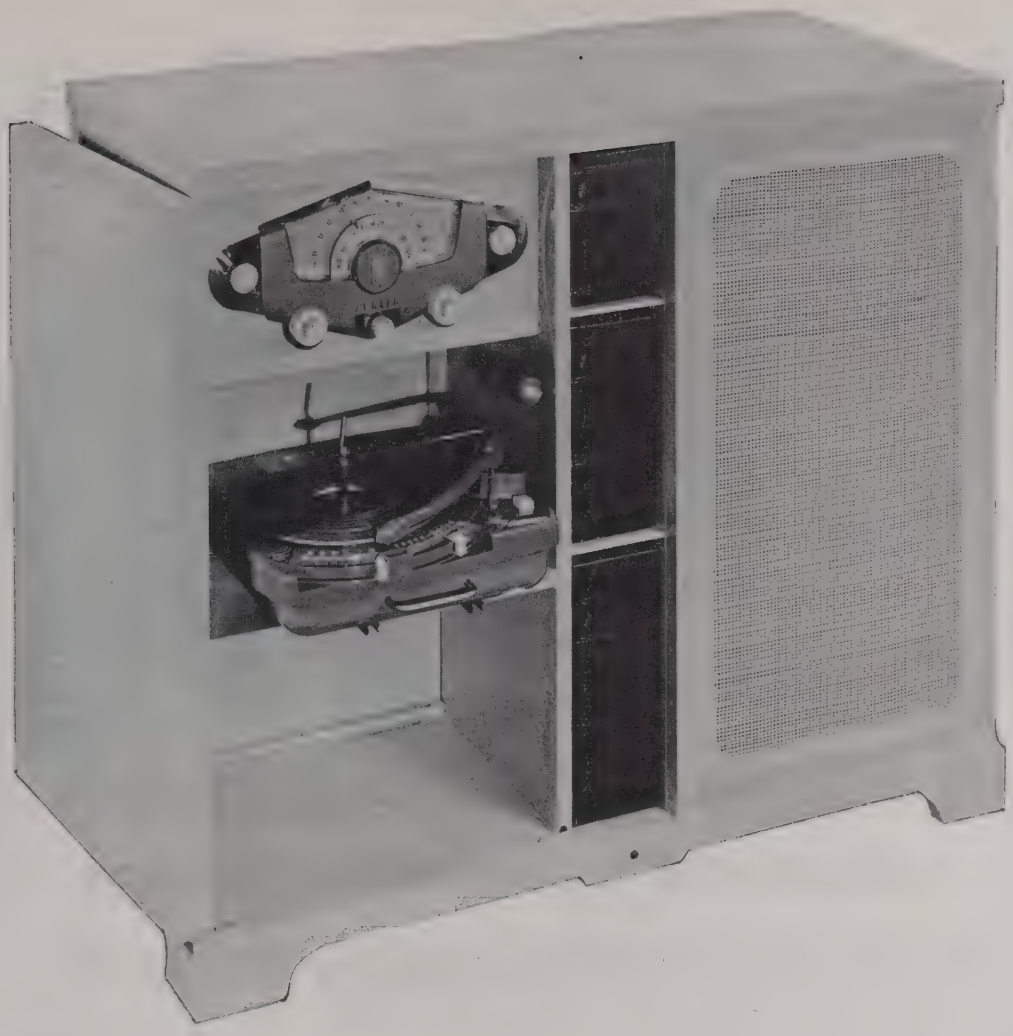
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA				REMARKS
	V-M PART No.	FIDELITONE PART No.	JENSEN PART No.	WALCO PART No.	
M2		† AC-130 or ♦† AC-130D1 or ♦AC-130D	† S-66 or ♦† S-66SD or ♦S-66D	† W-75TPS or ♦† W-75DS or ♦W-75TPD	† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	V-M PART No.	NOTES
M3	Switch	9294	Input Selector (DPDT-Slide Type)
	Case	7914	
	Knob	5846	On-Off-Volume & Tone
	Knob	6918-A13	Speed

ZENITH MODELS HFX1284E, HFX1290R



ZENITH MODELS HFX1284E, HFX1290R

TRADE NAME	Zenith Models HFX1284E, HFX1290R (Ch. 12X21)	
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois	
TYPE SET	AC Operated FM-AM Superheterodyne Receiver with 4 Speed Automatic Record Changer	
TUBES	Twelve	
POWER SUPPLY	110-120 Volts AC-60 Cycles	RATING 1.36 Amp. @ 117 Volts AC
TUNING RANGE - BROADCAST	540KC-1620KC	FREQ. MOD. 88MC-108MC

ZENITH RECORD CHANGER UNIT - MODEL S-14067

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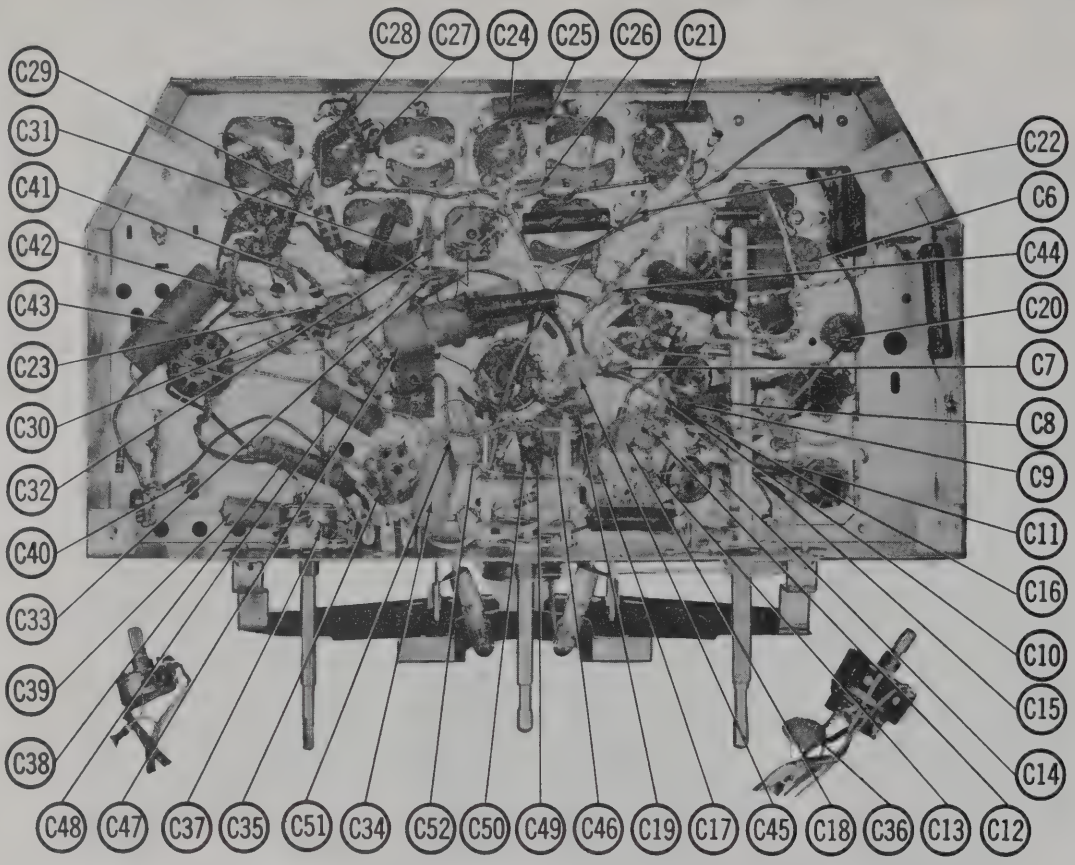
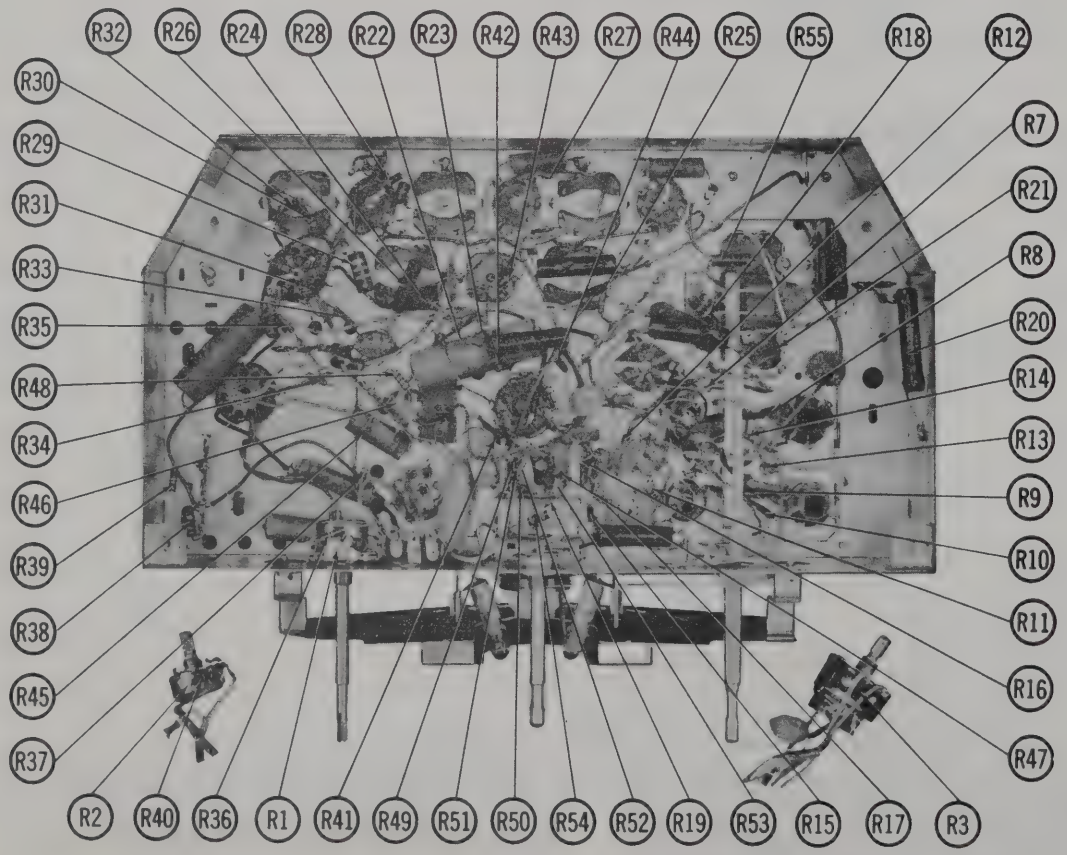
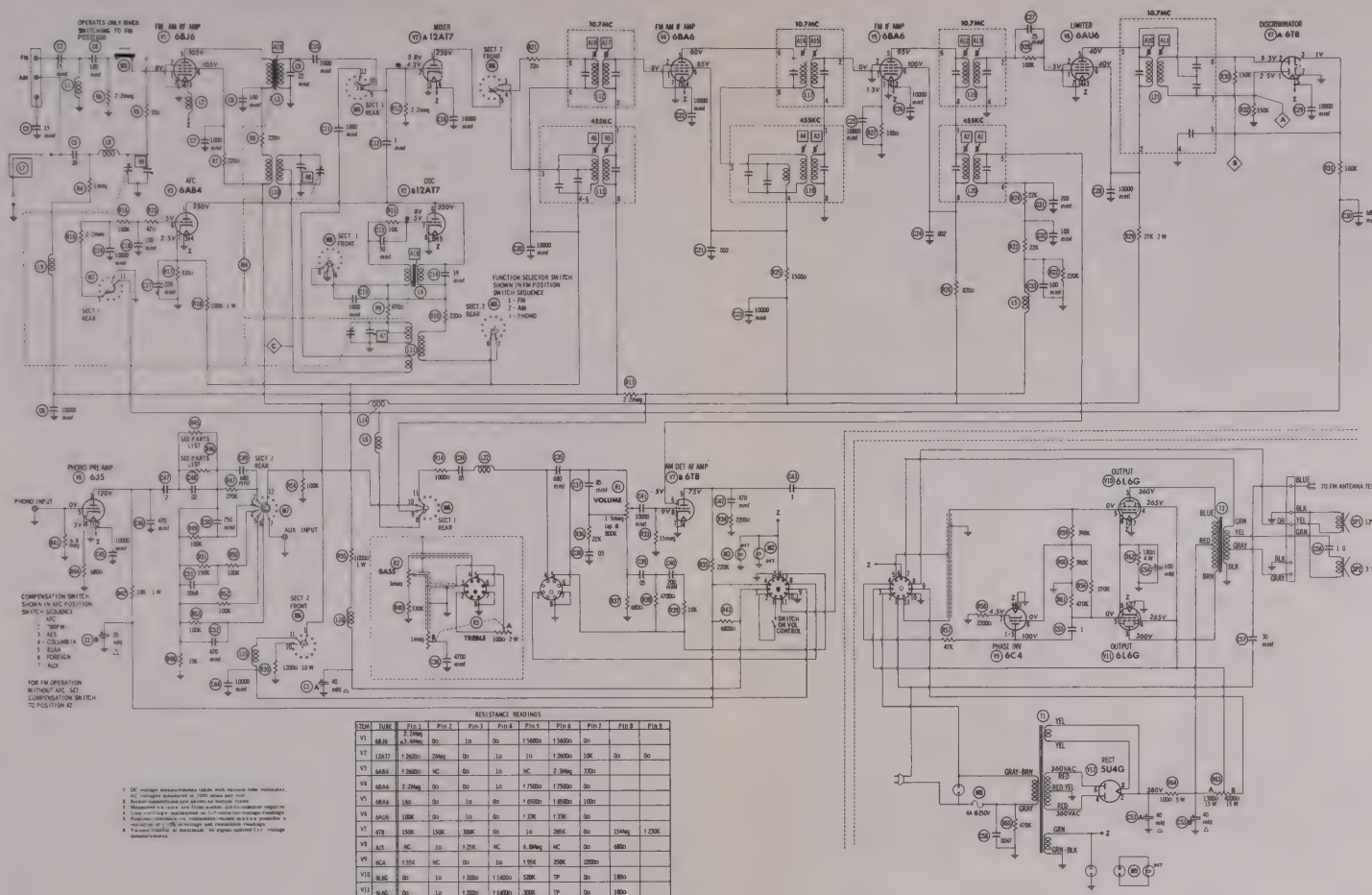


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BJ6	2.2Meg	0Ω	1Ω	0Ω	†560Ω	†560Ω	0Ω		
V2	12AT7	†2600Ω	25Meg	0Ω	1Ω	1Ω	†2600Ω	10K	0Ω	0Ω
V3	6AB4	†2600Ω	NC	0Ω	1Ω	NC	2.3Meg	330Ω		
V4	6BA6	2.2Meg	0Ω	0Ω	1Ω	†7500Ω	†7500Ω	0Ω		
V5	6BA6	1Ω	0Ω	1Ω	0Ω	†6500Ω	†6500Ω	100Ω		
V6	6AU6	100K	0Ω	1Ω	0Ω	†33K	†33K	0Ω		
V7	6T8	150K	1.5M	300K	0Ω	1Ω	265K	0Ω	1.5Meg	†250K
V8	6J5	NC	1Ω	†25K	NC	6.8Meg	NC	0Ω	680Ω	
V9	6C4	†55K	NC	0Ω	1Ω	†55K	250K	2200Ω		
V10	6L6G	0Ω	1Ω	†200Ω	†1400Ω	520K	TP	0Ω	180Ω	
V11	6L6G	0Ω	1Ω	†200Ω	†1400Ω	300K	TP	0Ω	180Ω	
V12	5U4G	NC	15K	0Ω	46Ω	NC	42Ω	NC	15K	

ALL MEASUREMENTS TAKEN IN FM POSITION UNLESS NOTED OTHERWISE
† MEASURED FROM PIN 2 OF V12
* MEASURED IN AM POSITION.
NC NO CONNECTION
TP TIE POINT

1 DC voltage measurements taken with vacuum tube voltmeter, AC voltages measured at 1000 ohms per volt.
2 Socket connections are shown as bottom views.
3 Measured values are from audio position to common negative.
4 Line voltage maintained at rated nominal voltage reading.
5 Resistance readings are approximate values and possible a 20% tolerance due to circuit and resistance readings.
6 Values noted as electrical are signal applied for voltage measurements.

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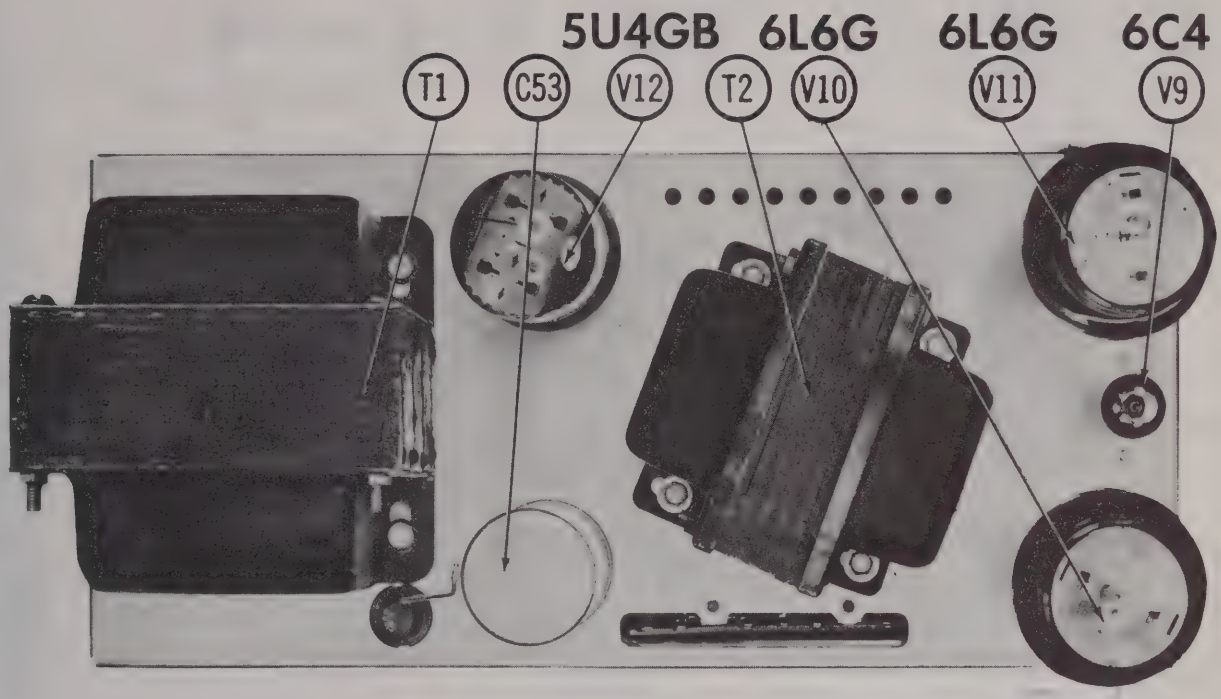
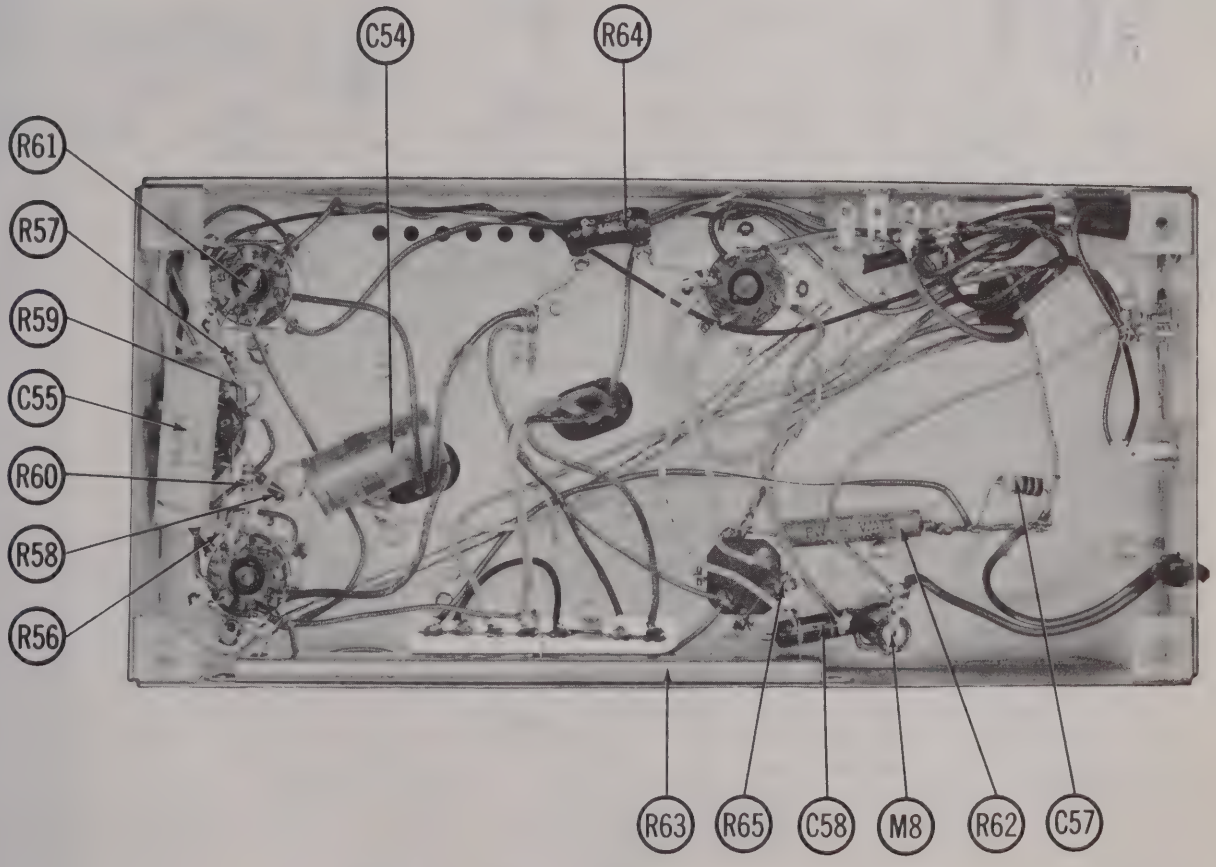


POWER SUPPLY CHASSIS-TOP VIEW



POWER SUPPLY CHASSIS-BOTTOM VIEW

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial.
AFC and phono compensation switch should be turned to "78" before aligning FM portion of the receiver.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to pin 2 (grid) of 12AT7 (V2). Low side to chassis.	455KC (400%Mod)	BC	600KC	Across voice coil	A1, A2, A3, A4, A5, A6	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	High side to AM antenna terminal. Low side to chassis.	1620KC	"	Tuning gang fully open	"	A7	Adjust for maximum output.
3.	"	"	1400KC	"	1400KC	"	A8, A9	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Use only enough signal to provide usable indication on VTVM.
Temporarily increase generator output when adjusting A11.
Use 2Meg isolation resistor in series with DC probe.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.05MFD	High side to pin 1 (grid) of 6AU6 (V6). Low side to chassis.	10.7MC (Unmod)	FM	Point of non-interference	DC probe to point Ⓐ. Common to chassis.	A10	Adjust for maximum deflection.
5.	"	"	"	"	"	DC probe to point Ⓑ. Common to chassis.	A11	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
6.	"	High side to pin 1 (grid) of 6BA6 (V5). Low side to chassis.	"	"	"	DC probe to pin 1 (grid) of 6AU6 (V6). Common to chassis.	A12, A13	Adjust for maximum deflection.
7.	"	High side to pin 1 (grid) of 6BA6 (V4). Low side to chassis.	"	"	"	"	A14, A15	"
8.	"	High side to point Ⓒ. Low side to chassis.	"	"	"	"	A16, A17	Adjust for maximum deflection. Repeat steps 6, 7 and 8.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	.05MFD	High side to pin 1 (grid) of 6AU6 (V6). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. to point Ⓐ. Low side to chassis.	A10	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
5.	"	"	"	"	"	Vert. Amp. to point Ⓑ. Low side to chassis.	A11	Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A10 for maximum amplitude and straightness of crossover lines.
6.	"	High side to pin 1 (grid) of 6BA6 (V5). Low side to chassis.	"	"	"	Vert. Amp. to pin 1 (grid) of 6AU6 (V6). Low side to chassis.	A12, A13	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
7.	"	High side to pin 1 (grid) of 6BA6 (V4). Low side to chassis.	"	"	"	"	A14, A15	"
8.	"	High side to point Ⓒ. Low side to chassis.	"	"	"	"	A16, A17	"

FM RF ALIGNMENT

Use 2Meg isolation resistor in series with DC probe.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	270Ω Carbon Resistor	High side thru 270Ω to FM antenna terminal. Low side to terminal "G".	98MC (Unmod)	FM	98MC	DC probe to pin 1 (grid) of 6AU6 (V6). Common to chassis.	A18, A19	Adjust in order given for maximum deflection.

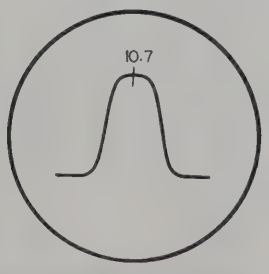


FIG. 1

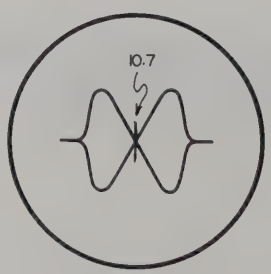
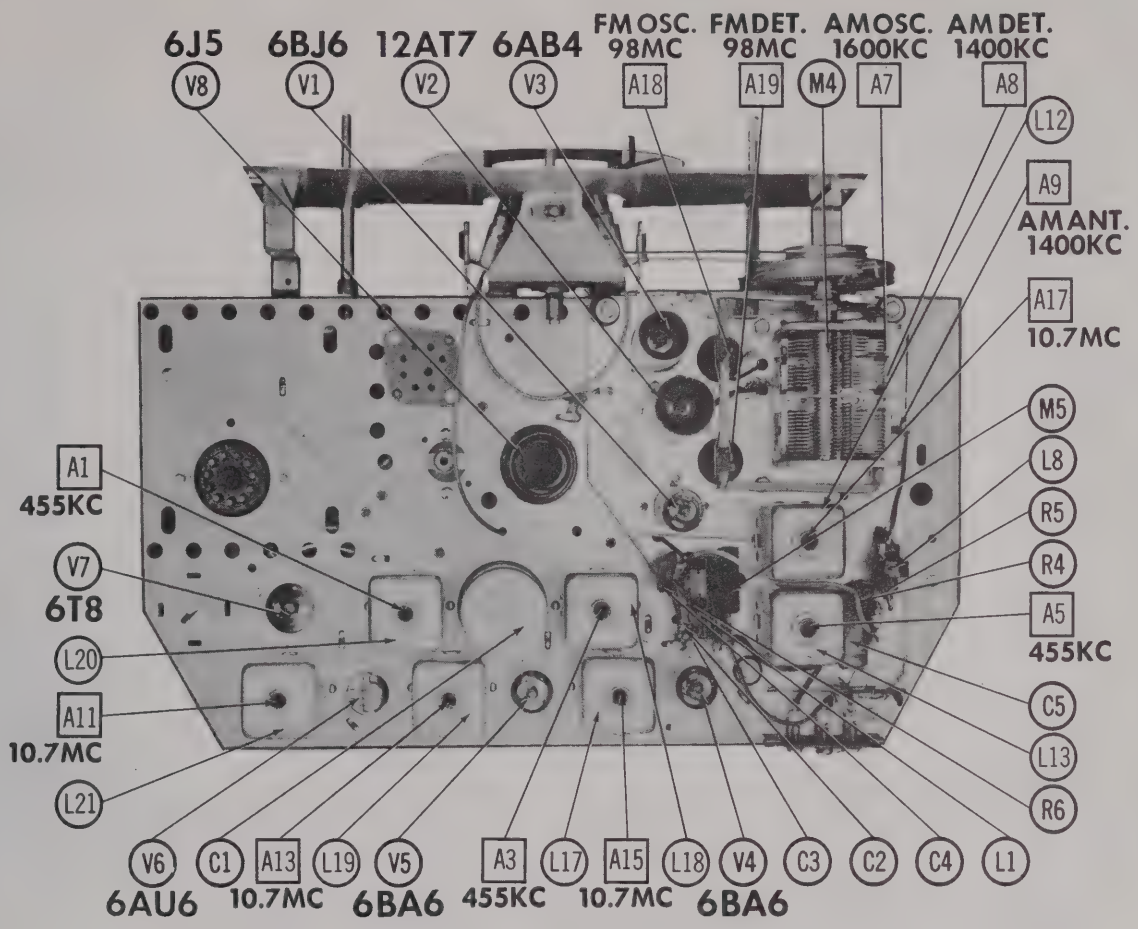
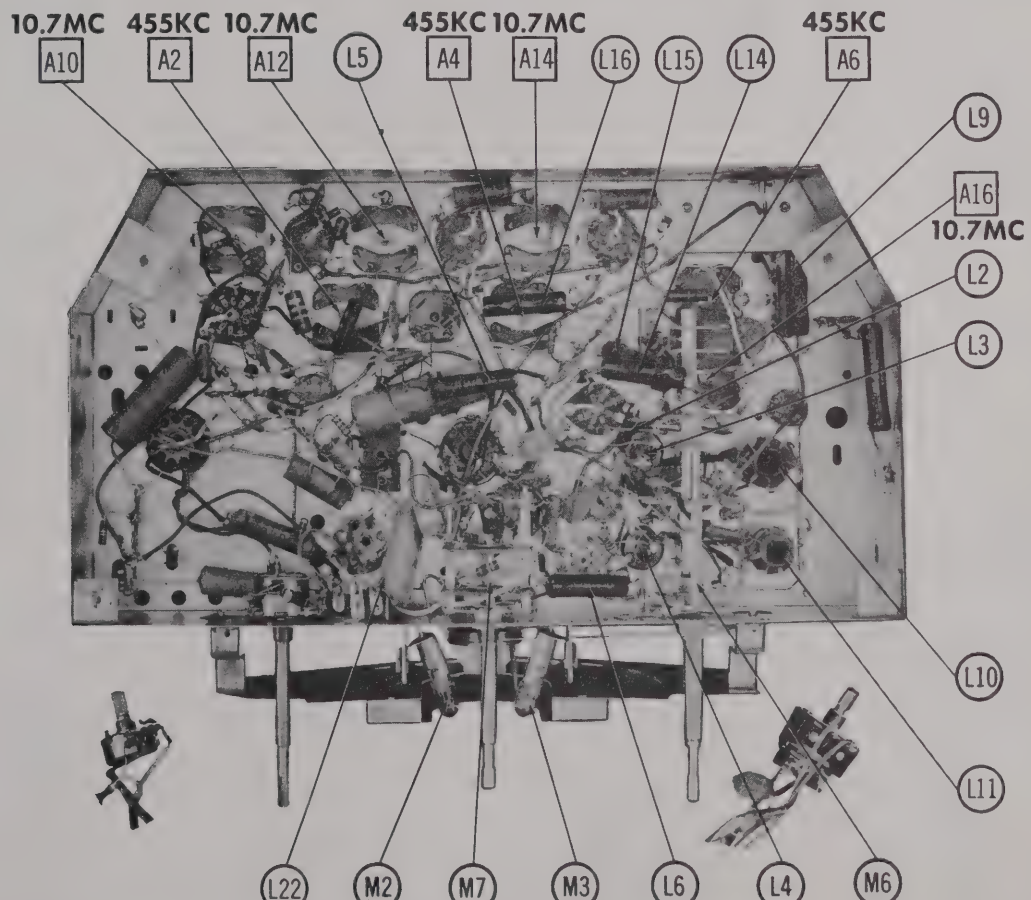


FIG. 2

CHASSIS-TOP VIEW



CHASSIS-BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM-AM RF Amplifier	6BJ6	
V2	FM-AM Mixer-Osc.	12AT7	
V3	FM AFC	6AB4	
V4	1st. FM-AM IF Amplifier	6BA6	
V5	2nd. FM-AM IF Amplifier	6BA6	
V6	Limiter	6AU6	
V7	Disc.-AM Det.-AVC-AF Amplifier	6T8	
V8	Phono Preamplifier	6J5	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲40	450	22-2686	AFH2-56	B044	FP376.5	TMD-53	D-230	TVL-3780
B	▲20	450							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	15		22-2140	SII5	D6-150	TP11	GP1K-150	UC-5415	5GA-Q15	
C3	15		22-2140	SII5	D6-150	TP11	GP1K-150	UC-5415	5GA-Q15	
C4	100		22-5	BPD-0001	DD-101	G042	801-101	UC-531	5GA-T1	
C5	.05	200	22-829	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C6	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C7	1000		22-1676	SII000	D6-102	TP52	GP2L-102	UC-521	5HK-D1	
C8	100		22-5	BPD-0001	DD-101	G042	801-101	UC-531	5GA-T1	
C9	22		22-1506							
C10	1000		22-1676	SII000	D6-102	TP52	GP2L-102	UC-521	5HK-D1	
C11	1000		22-1676	SII000	D6-102	TP52	GP2L-102	UC-521	5HK-D1	
C12	1		22-1762	NP0-S11	TCZ-1	TZ03	NP0A-010		5TCCB-V1	
C13	50		22-1367							
C14	19		22-2630							
C15	1000		22-1676	SII000	D6-102	TP52	GP2L-102	UC-521	5HK-D1	
C16	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C17	220		22-2321	SI220	D6-221	TP39	GP2K-221	UC-5322	5GA-T22	
C18	100		22-9	BPD-0001	DD-101	G042	801-101	UC-531	5GA-T1	
C19	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C20	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C21	.002	600	22-1220	SI2000	D6-202	CUB6D2	GP2-333-202	PT622	6TM-D2	
C22	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C23	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C24	.002	600	22-1220	SI2000	D6-202	CUB6D2	GP2-333-202	PT622	6TM-D2	
C25	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C26	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C27	25		22-1877	SI25	D6-250	TP25	GP1K-250	UC-5425	5GA-Q25	
C28	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C29	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C30	680		22-2387	SI680	D6-681	TP50	GP2K-681	UC-5368	5GA-T68	
C31	200		22-2472	BPD-0002	DD-201	G050	GP2K-201	UC-532	5GA-T2	
C32	100		22-5	BPD-0001	DD-101	G042	801-101	UC-531	5GA-T1	
C33	100		22-5	BPD-0001	DD-101	G042	801-101	UC-531	5GA-T1	
C34	.05	600	22-2685	BPD-05	DF-503	CUB6S5		PT615	6TM-S5	
C35	680		22-2387	SI680	D6-681	TP50	GP2K-681	UC-5368	5GA-T68	
C36	4700		22-4	BPD-0047	DD-472	K070	811-0047	DC-525	5HK-D47	
C37	85		22-2684							
C38	.03	200	22-1157	BPD-03	DF-303	CUB6S3		PT613	6TM-S3	
C39	.05	200	22-829	BPD-05	DF-503	CUB2S5		PT415	2TM-S5	
C40	200		22-1866	SI200	D6-201	TP38	GP2K-201	UC-532	5GA-T2	
C41	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C42	470		22-2302	SI470	D6-471	TP46	GP2K-471	UC-5347	5GA-T47	
C43	.1	600	22-417	P688N-1	DF-104	CUB6P1		PT601	6TM-P1	
C44	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C45	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	5HK-S1	
C46	470		22-6	BPD-00047	DD-471	G060	831-471	UC-5347	5GA-T47	
C47	.2	600	22-2688	P688N-22		CUB6P2		PT602	6TM-P2	
C48	.02	400	22-1127	BPD-02	DD-203	CUB4S2	817-02	PT412	4TM-S2	
C49	680		22-2387	SI680	D6-681	TP50	GP2K-681	UC-5368	5GA-T68	
C50	750		22-1962	SI750	D6-751	TP51	GP2K-751	UC-5375	5GA-T75	
C51	.0068	600	22-2268	SI6800	D6-682	CUB6D68	811-0068		6TM-D68	
C52	470		22-2302	SI470	D6-471	TP46	GP2K-471	UC-5347	5GA-T47	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1.5Meg	½	63-2891	ABT-82	A47F3-2Meg	Q18-139X	UT451	Volume-tapped @ 800K
B	Shaft		Not Req.	AK-4	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	KB-1	SWE-12	76-1	US26	Attach to R1A
R2A	3Meg	½	63-3293	AB-84	A47-2Meg-S	Q11-140	U-59	Hand
B	Shaft		Not Req.	AK-4	KSS-3	Not Req.	Not Req.	Attach to R2A
R3A	100Ω	2	63-3292				UE42	Treble (Panel)
B	1Meg	½						Treble (Rear)

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R4	1Meg		63-1912	BTS-1Meg	
R5	33Ω		63-1723	BTS-33	
R6	2.2Meg		63-1926	BTS-2.2Meg	
R7	220Ω		63-1758	BTS-220	
R8	220Ω		63-1758	BTS-220	
R9	470Ω		63-1772	BTS-470	
R10	220Ω		63-1758	BTS-220	
R11	10K		63-1827	BTS-10K	
R12	2.2Meg		63-1926	BTS-2.2Meg	
R13	2.2Meg		63-1926	BTS-2.2Meg	
R14	1000Ω		63-1786	BTS-1000	
R15	47Ω		63-1730	BTS-47	
R16	100K		63-1869	BTS-100K	
R17	330Ω		63-1764	BTS-330	
R18	100K	1	63-2137	BTA-100K	
R19	2.2Meg		63-1926	BTS-2.2Meg	
R20	1200Ω	10	63-2021	1 3/4A-1200	
R21	22Ω		63-1716	BTA-22	
R22	220K		63-1884	BTS-220K	
R23	22K		63-1842	BTS-22K	
R24	22K		63-1842	BTS-22K	
R25	1500Ω		63-1793	BTS-1500	
R26	820Ω		63-2091	BW½-820	
R27	100Ω		63-1744	BTS-100	
R28	100K		63-1869	BTS-100K	
R29	27K	2	63-947	BTB-27K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R30	150K		63-1876	BTS-150K	
R31	100K		63-1869	BTS-100K	
R32	150K		63-1876	BTS-150K	
R33	15Meg		63-1961	BTS-15Meg	
R34	2200Ω		63-1799	BTS-2200	
R35	220K		63-1884	BTS-220K	
R36	22K		63-1841	BTS-22K	
R37	680Ω		63-1778	BTS-680	
R38	4700Ω		63-1813	BTS-4700	
R39	10K		63-1827	BTS-10K	
R40	330K			BTS-330K	
R41	6.8Meg		63-1946	BTS-6.8Meg	
R42	18K	1	63-2807	BTA-18K	
R43	6800Ω		63-1820	BTS-6800	
R44	680Ω		63-1778	BTS-680	
R45			63-3285	19PA1-V	Note 1
R46			63-3285	19PA1-V	Note 1
R47	270K		63-1887	BTS-270K	
V48	33K		63-1848	BTS-33K	
R49	100K		63-1869	BTS-100K	
R50	100K		63-1869	BTS-100K	
R51	150K		63-1876	BTS-150K	
R52	100K		63-1869	BTS-100K	
R53	100K		63-1869	BTS-100K	
R54	100K		63-1869	BTS-100K	
R55	1000Ω	1	63-1786	BTA-1000	

Note 1. Special type. Resistance changes in value according to voltage applied.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	ZENITH PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	FM RF Choke	0Ω		S-16408	19-3001		4602	1 Microhenries
L2	Fil. Choke	.9Ω		S-13997	19-1005		4612	
L3	FM RF Coil	0Ω	0Ω	S-15745				
L4	FM Osc. Coil	0Ω	0Ω	S-15691				
L5	RF Coil	0Ω		20-337	19-1003	BC-537	4608	4.2 Microhenries
L6	RF Coil	0Ω		20-337	19-1003	BC-537	4608	4.2 Microhenries
L7	Loop Ant.	.8Ω		S-17917				
L8	Ant. Loading Coil	3.3Ω		S-18812	19-3250	TV-185	4646	223 Microhenries
L9	RF Coil	0Ω		20-337	19-1003	BC-537	4608	4.2 Microhenries
L10	AM RF Coil	2.6Ω	11Ω *	S-16344				
L11	AM Osc. Coil	.8Ω	8.5Ω■	S-22185				

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (cont)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	ZENITH PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L12	1st. FM IF	.5Ω	.5Ω	95-1201	16-6665 ▲	FM-251	1451	
L13	1st. AM IF	16Ω	4.6Ω	95-1248				
L14	RF Coil	0Ω		20-337	19-1003	BC-537	4608	4.2 Microhenries
L15	RF Coil	0Ω		20-337	19-1003	BC-537	4608	4.2 Microhenries
L16	RF Coil	0Ω		20-337	19-1003	BC-537	4608	4.2 Microhenries
L17	2nd. FM IF	.5Ω	.5Ω	95-1150	16-3487 ■	FM-251	1451	
L18	2nd. AM IF	.4Ω	16Ω	95-1249				
L19	3rd. FM IF	.5Ω	.5Ω	95-1150	16-3487 ▲	FM-251	1451	
L20	3rd. AM IF	17Ω	11Ω	95-1254	16-5742	BC-340	912-C4	
L21	Discriminator	.4Ω	.4Ω	95-1153	17-3484 ♦	FM-250 ♦	1452 ♦	
L22	RF Coil	0Ω		20-337	19-1003	BC-537	4608	4.2 Microhenries

* Tapped @ 3.3Ω.
■ Tapped @ 3.4Ω. Tertiary winding -1.2Ω
▲ Drill new mounting hole.
▲ Use adaptor plate.
♦ Add diode filter cap externally.

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA					REMARKS
	ZENITH PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	142-76					

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M2	Dial Light	100-67	#47
M3	Dial Light	100-67	#47
M4	Tuning Cap.	22-2400	3 Gang (18-370MMF, 11-200MMF, 11-85MMF)
M5	Switch	85-505	FM-AM (SPDT Slide Type) Mechanically ganged to M6
M6	Switch	85-557	Selector (Rotary, wafer type)
M7	Switch	85-565	Record compensation (Rotary, wafer type)

PARTS LIST AND DESCRIPTIONS (Continued)

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V9	Phase Inverter	6C4	
V10	Output	6L6G	

ITEM No.	USE	TYPE	NOTES
V11	Output	6L6G	
V12	Rectifier	5U4G	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C53A	▲40	475	22-2581	AFH2-72	B053	FP262	TMD-62	D-275	TVL-2830
B	▲40	475							
C54	100	50	22-2580	PRS50V100	BRH501	TC3501	TD-100-50	MTH-5010	TVA-1310

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C55	.1	600	22-1841	P688N-1	DF-104	CUB6P1		PT601	6TM-P1	
C56	1.0	120	22-1623	P288N-1.0		CUB2W1		PT41	2TM-M1	
C57	30		22-1705	SI30	D6-330	TP27	GP1K-300	UC-5433	5GA-Q3	
C58	.0047	600	22-2579	SI4700	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R56	270K		63-1887	BTS-270K	
R57	47K		63-1856	BTS-47K	
R58	2200Ω		63-1799	BTS-2200	
R59	390K		63-1894	BTS-390K	
R60	390K		63-1894	BTS-390K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R61	470K		63-1898	BTS-470K	
R62	180Ω	4	63-3211	PW4-200	
R63A	1300Ω	15	63-3254	2D-1250	
B	4000Ω	15		2D-4000	
R64	100Ω	5	63-3218	PW7-100	
R65	470K		63-1898	BTS-470K	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	SEC. 3	ZENITH PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC @1.36A	725VCT @.180A	5VAC @ 3A	6.3VAC @4.4A	95-1394				24R06U ①	R-18A ①

① Tape 6.3V CT.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	ZENITH PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	7.7KΩ	6-8Ω	95-1395	H-4103①②			22S98 ①	S-31A ①	① Drill new mounting holes. ② Tape unused winding.

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

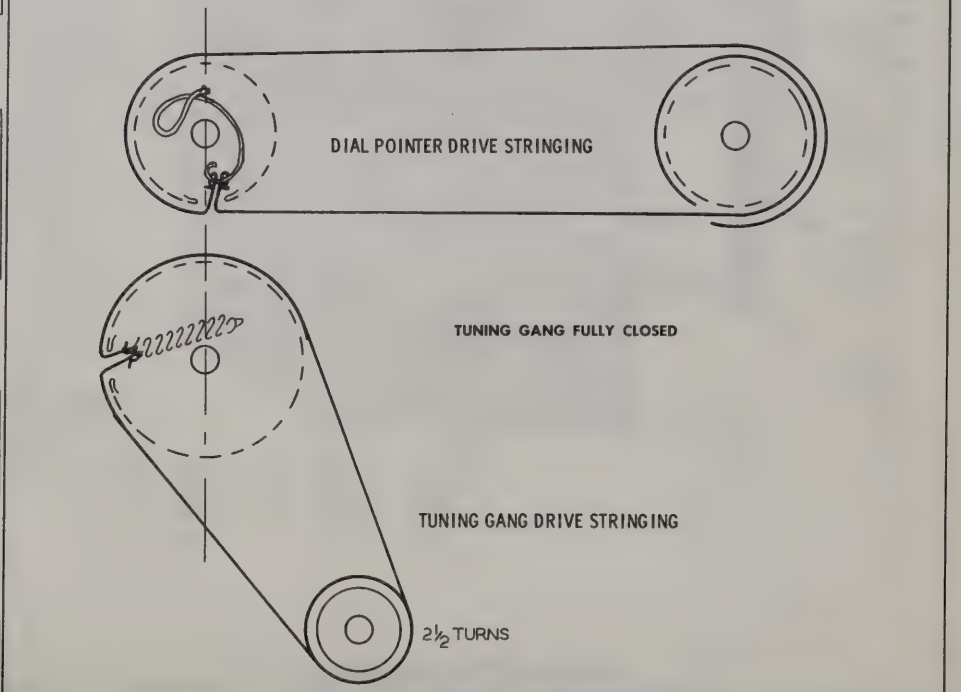
ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	QUAM PART No.	RCA TYPE No.	
SP1	12"	PM	6-8Ω	49-760	12A10X	41287	
SP2	3½"	PM	11.8Ω	49-777	3A15T		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ZENITH PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M8	3AG	4A 250V	136-31		312004. (3AG 4A)	342001	MTH4	HKP

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M9	Pilot Light	100-67	#47
	Cabinet	14-1709R	Model HFX1290R
	Cabinet	14-1721E	Model HFX1284E
	Knob	46-1041	Tuning
	Knob	46-1043	Selector & Record compensation switches
	Knob	46-1153	Tone (2 used)



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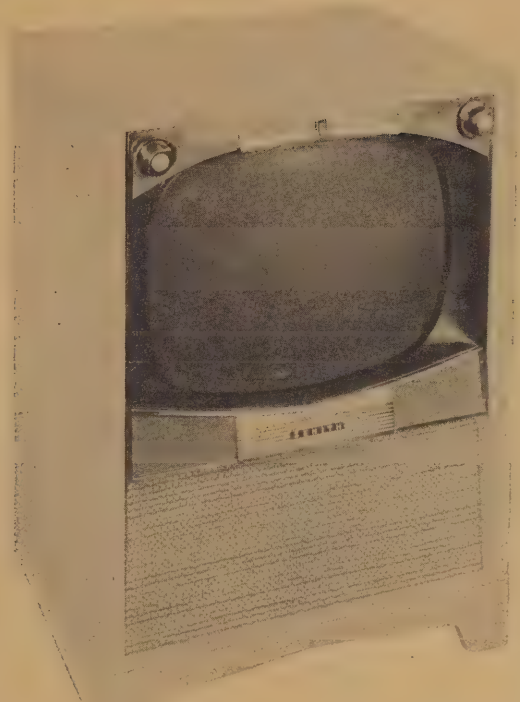

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ZENITH MODEL Y2256E

TRADE NAME	Zenith	MODELS	CHASSIS
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		Y2229RU, Y2230EU, Y2230RU, Y2254MU, Y2256EU, Y2256RU, Y2263RU	19Y22U
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois		
TYPE SET	Television Receiver		
TUBES	Nineteen		
POWER SUPPLY	110-120 Volts AC-60 Cycles	RATING 1.67 Amp. @ 117 Volts AC	
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

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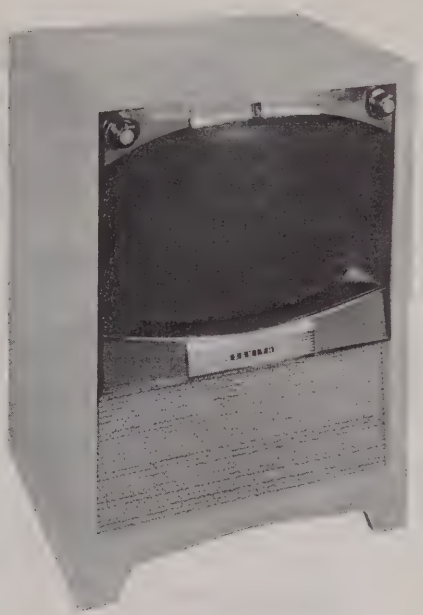

MODEL	CHASSIS
Y2256E	19Y22

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 7 push-on type control knobs from front panel of cabinet.
2. Remove 9 wood screws. Remove rear cover.
3. Disconnect speaker leads.
4. Remove volume control from cabinet.
5. Remove 2 metal screws from top rear of cabinet (holding tuner to cabinet) lower rear of tuner and pull out.
6. Remove 4 chassis bolts. Remove chassis.
7. Remove 4 speaker nuts. Remove speaker.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

For touch-up adjustment of the VHF tuner oscillator circuit, it is necessary to remove rear cover and supply power to set. Adjustments are made thru the hole marked "Bull's Eye Adjustment" and are accessible one at a time as the selector switch is turned to each channel. (Fine tuning control must be set to the center of its range before making adjustments). Use Zenith alignment wrench part #68-21 for adjustment.

PICTURE TUBE SAFETY GLASS CLEANING

Turn Zenith emblem counter clockwise 1/4 turn. Push up escutcheon plate and tilt glass out at top and remove. Use extreme caution when removing safety glass.

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

SPECIAL ADJUSTMENTS

A. AGC Control Adjustment

Turn the set on and tune in a TV station,. Starting from full clockwise position, turn the AGC control (R6) counter clockwise slowly until picture distorts and buzz is heard in the sound. Then turn R6 clockwise for clearest picture and best sound.

B. Fringe Lock Adjustment

Turn the fringe lock control (R10) to 1/4 turn from full clockwise position. Adjust the vertical and horizontal hold controls for picture synchronization and check stability by switching off channel and back again. SLIGHTLY retouch R10 if necessary for maximum stability while testing as above.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made from the front panel service control. Adjust the horizontal hold (L22) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

Adjust the buzz control (R11) located on rear apron of the chassis for maximum volume and minimum buzz.

FUSES

One fuse is used for horizontal sweep circuit protection. (For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

ANTI-PIN CUSHION ADJUSTMENT

Reduce the picture size so that the sides of the raster are visible, and position the magnets so that all sides are straight lines and the corners are at right angles.

ZENITH MODELS Y2229R, RU, Y2230E, EU, R, RU, Y2254M, MU, Y2256E, EU, R, RU, Y2263R, RU (Ch. 19Y22, U)

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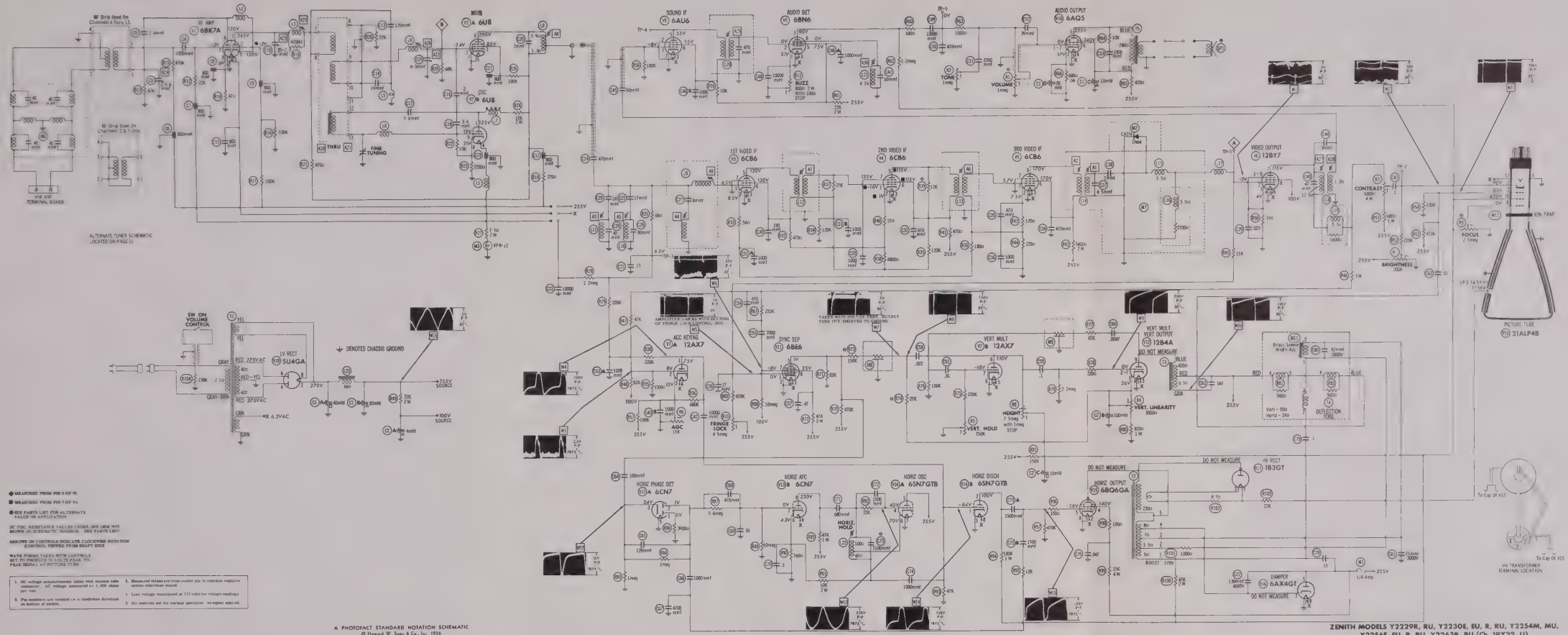

ZENITH MODELS Y2229R, RU, Y2230E, EU, R, RU, Y2254M, MU, Y2256E, EU, R, RU, Y2263R, RU (Ch. 19Y22, U)

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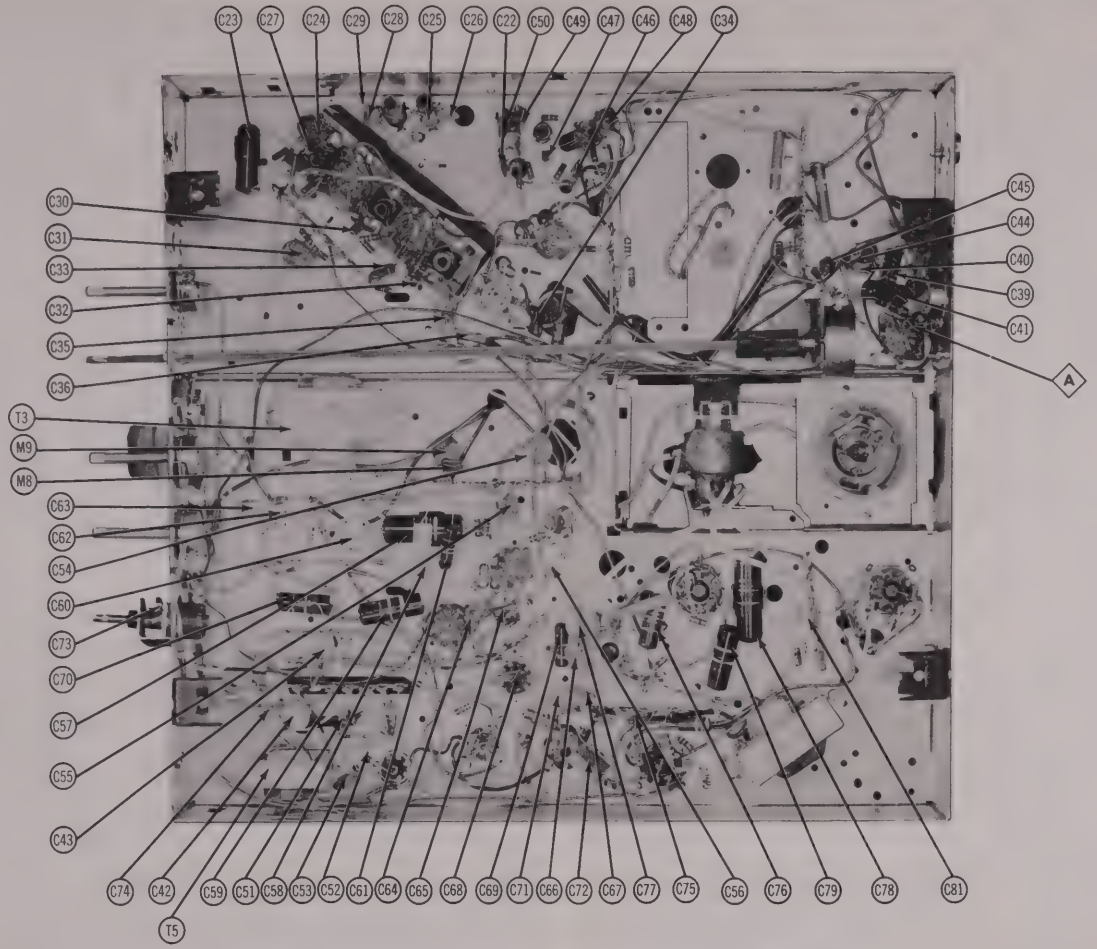
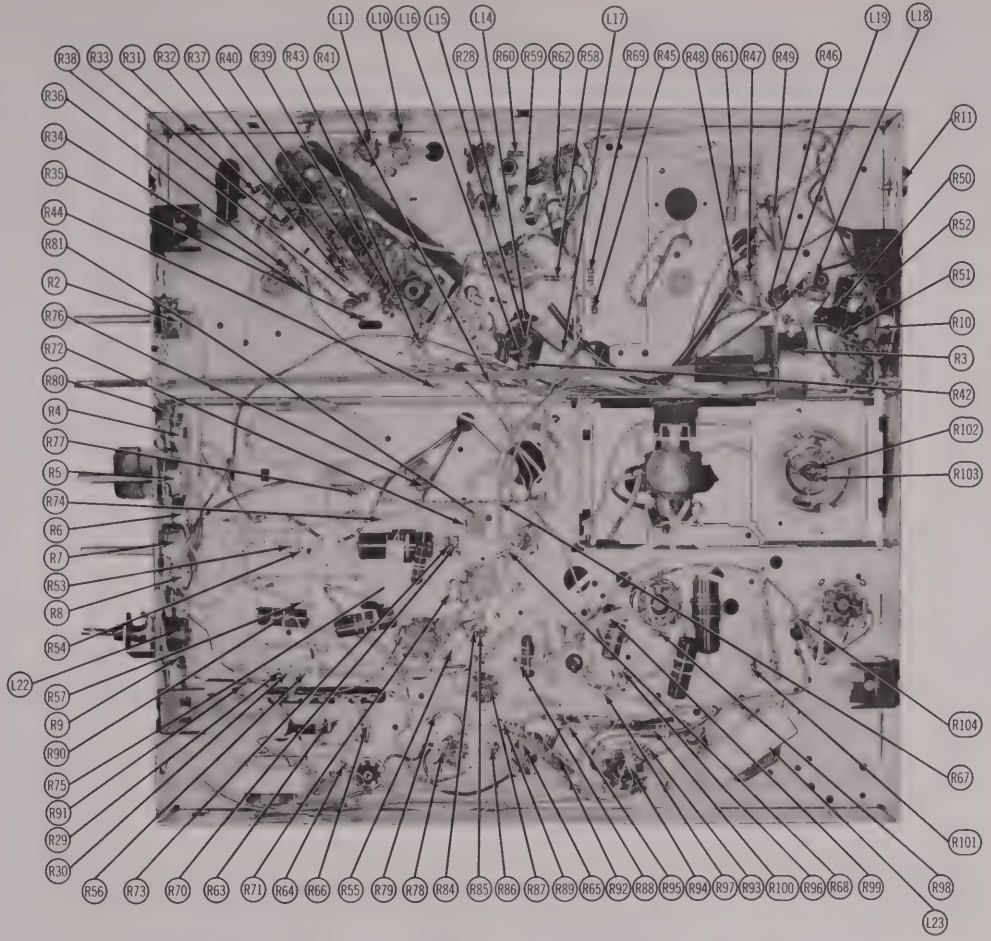
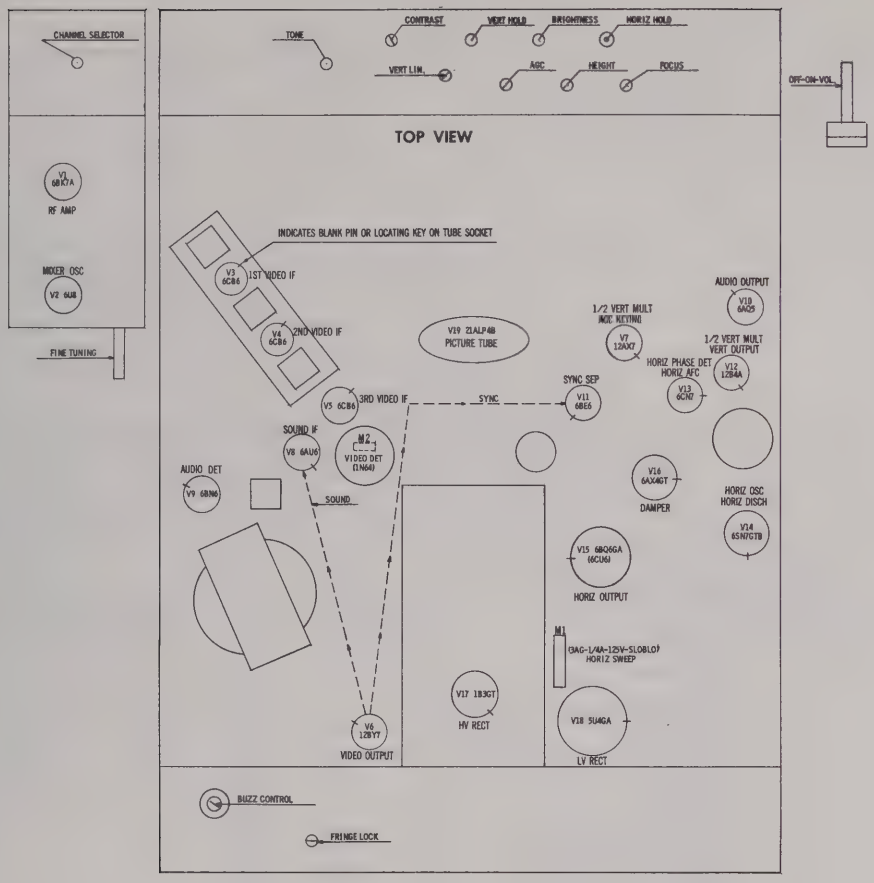


CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V18

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V6, V7, V19
Has pic, no sound - V8, V9, V10
Overloaded picture - V7

SYNC FAILURE
No vert. sync - V7, V11, V12
No horiz. sync - V11, V13, V14
No vert. or horiz. sync - V11

SWEEP FAILURE
No raster, has sound - V14, V15, V16, V17, V19, Fuse (M1)
No vertical deflection - V7, V12
Poor vert. linearity or foldover - V7, V12
Poor horiz. linearity or foldover - V14, V15, V16
Narrow picture - V14, V15, V16, V17, V18
Vert. off freq. - V7, V11, V12
Horiz. off freq. - V11, V13, V14

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

If the set is aligned with the picture tube removed, the end of the high voltage lead should be securely taped and kept away from chassis.

VIDEO IF ALIGNMENT

Turn the turret tuner to a position mid-way between two channels.
Connect the negative lead of a 2 volt bias supply to pin 1 (Plate) of 12AX7 (V7). Connect the positive lead to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	470MMF	High side to pin 1 (grid) of 3rd. Video IF amp. tube (V5). Low side to chassis.	44MC (10MC Swp)	39.75MC 45.75MC	See note above	Vert. Amp. thru 10K to point (A). Low side to chassis.	A1, A2	Adjust for response curve similar to Fig.1. If correct response cannot be obtained. Check to see that the slugs are entering the coils from the outside end (of coils).
2.	"	High side to point (B). Low side to chassis.	"	39.75 MC 41.25MC 47.25MC	"	"	A3, A4, A5	Reduce bias to zero. Turn sweep generator output to maximum. Increase gain on scope to magnify trap portions of response curve, Adjust traps for response similar to Fig.2. A3 adjusts 39.75MC trap, A4 adjusts 41.25MC trap and A5 adjusts 47.25MC trap.
3.	"	"	"	42.75MC 45.0MC 45.75MC	"	"	A6, A7, A8, A9	Replace 2 volt bias. Adjust for response curve similar to Fig. 3. Readjustment of A1 and A2 should not be required to obtain proper response.

OSCILLATOR ALIGNMENT

The master oscillator adjustment of (L6) is to be made only if the adjustment of the individual oscillator adjustments fail to bring the channels within the range of the fine tuning control. L6 is adjusted by expanding or compressing coil turns. If channels 2 thru 6 fall within the range of the fine tuning control but the higher ones do not, slightly readjust L6 to bring in the higher channels. If channels 2 thru 6 do not fall within tuning range, readjust the bull's-eye, adjustment on rear of tuner. Connect the negative lead of a 1 volt bias supply as under "Video IF Alignment". Turn the oscilloscope gain up so that the sound trap notch in the response curve becomes visible.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	57MC (10MC Swp)	59.75MC	2	Vert. Amp. thru 10K to point (A). Low side to chassis.	A10	Adjust to place sound marker in trap notch as shown in Fig. 4.
			63MC (10MC Swp)	65.75MC	3		A11	
			69MC (10MC Swp)	71.75MC	4		A12	
			79MC (10MC Swp)	81.75MC	5		A13	
			85MC (10MC Swp)	87.75MC	6		A14	
			177MC (10MC Swp)	179.75MC	7		A15	
			183MC (10MC Swp)	185.75MC	8		A16	
			189MC (10MC Swp)	191.75MC	9		A17	
			195MC (10MC Swp)	197.75MC	10		A18	
			201MC (10MC Swp)	203.75MC	11		A19	
			207MC (10MC Swp)	209.75MC	12		A20	
			213MC (10MC Swp)	215.75MC	13		A21	

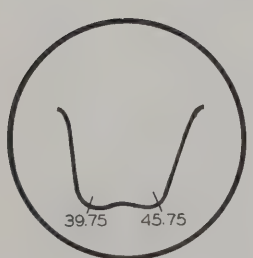


FIG.1

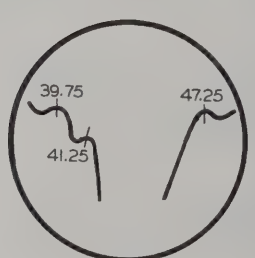


FIG.2

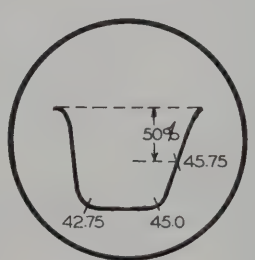


FIG. 3

ALIGNMENT INSTRUCTIONS (cont)

RF AND MIXER ALIGNMENT

Leave bias connected as under "Oscillator Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	69MC (10MC Swp)	67.25MC 71.75MC	4	Vert. Amp. to point (B). Low side to chassis.	A22, A23, A24	Adjust for response curve similar to Fig. 5.
6.	"	"	201MC (10MC Swp)	199.25MC 203.75MC	11	"	A25, A26	Adjust for response curve similar to Fig. 5. If bandpass is not correct SLIGHTLY bend L5 (slotted tab in shield plate). Repeat steps 5 and 6 for optimum results on all channels.

SOUND IF ALIGNMENT

Connect an attenuator (Zenith Part No. S-17203 or equivalent) in series with the receiver antenna. Tune in a TV signal and adjust the attenuator until the signal falls below the limiting level of the 6BN6 audio detector, as evidenced by a hiss similar to super-regeneration.
Adjust the sound take-off transformer (A27 and A28), the sound IF coil (A29) and the quadrature coil (A30) for maximum sound of best quality.
Adjust the buzz control (R11) for minimum intercarrier buzz. If the buzz cannot be eliminated with the buzz control, check the setting of the AGC control. If during any of the sound IF adjustments the signal rises above the limiting level, (hiss disappears), increase the attenuation until the hiss returns.

UHF TUNER ALIGNMENT (VHF-UHF TUNER #S21845)

Alignment of the UHF tuner should not be attempted unless proper test equipment is available. Switch receiver to UHF position. Connect bias as under "Video IF Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Fig. 7	Across UHF antenna terminals thru matching network (Fig. 7).	713MC (10MC Swp)	711.25MC	54	Vert. Amp. thru 10K to point (A). Low side to chassis.	A31	Tuner rocker arm should be in a horizontal position. If necessary, loosen the set screw and adjust tuner shaft so that rocker arm is horizontal with indicator set to channel 54. DO NOT adjust A31 unless oscillator calibration is off more than 3 channels. If necessary, adjust A31 for response similar to Fig. 6 with video marker at 50% the image (weaker response) will appear also. The response toward the counter clockwise position of A31 is the correct response.
8.	"	"	"	"	"	"	A32, A33	Adjust for maximum amplitude and symmetry of response similar to Fig. 6.
9.	"	"	473MC (10MC Swp)	471.25MC	14	"		Check for response similar to Fig. 6. If oscillator is off more than 3 channels, adjust the oscillator travel adjustment (osc. mixer and ant. travel adjustments are the 3 round thumb screws on top of the tuner) to scale. Care must be used in making these adjustments so as not to move the rocker arm out of its bearing. Set the mixer and antenna travel adjustments for maximum response on scope.
10	"	"	887MC (10MC Swp)	885.25MC	83	"	A34, A35, A36	Adjust A34 to place video marker at 50% on response curve as in Fig. 6. Adjust A35 and A36 for maximum amplitude and symmetrical response.

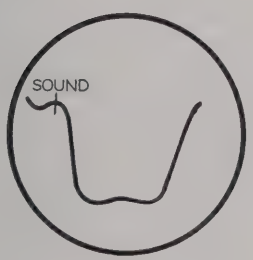


FIG. 4

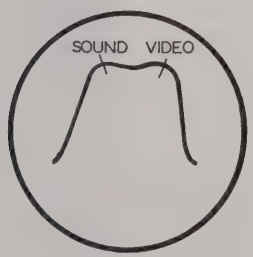


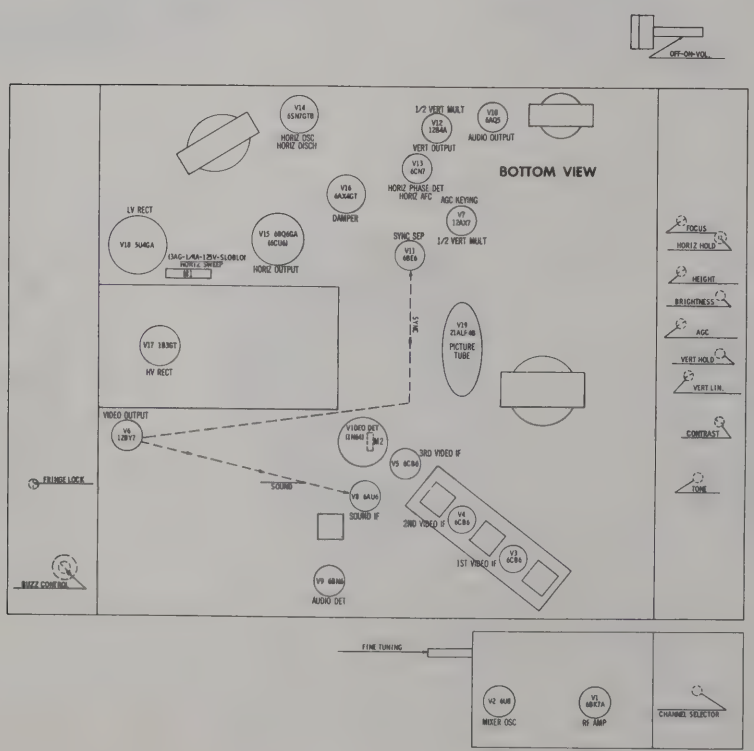
FIG. 5

FIG. 6

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BK7A	†750Ω	50K	INF	0Ω	.1Ω	INF	3Meg	47Ω	0Ω
V2	6U8	†10K	68K	†100K	.1Ω	0Ω	†280Ω	0Ω	2200Ω	12K
V3	6CB6	1Meg	450Ω	.1Ω	0Ω	■470Ω	■470Ω	0Ω		
V4	6CB6	60K	■15Ω	.1Ω	0Ω	†530Ω	†530Ω	60K		
V5	6CB6	220Ω	340Ω	.1Ω	0Ω	†5600Ω	†5600Ω	0Ω		
V6	12BY7	15Ω	2700Ω	15Ω	0Ω	0Ω	.1Ω	†5000Ω	†17K	15Ω
V7	12AX7	680K	3000Ω	●6500Ω	.1Ω	.1Ω	●▲3Meg	● 400K	0Ω	0Ω
V8	6AU6	100K	0Ω	.1Ω	0Ω	†32K	†32K	0Ω		
V9	6BN6	● 450Ω	.3Ω	.1Ω	0Ω	†22K	4.7Ω	▲1.2Meg		
V10	6AQ5	● 500K	680Ω	0Ω	.1Ω	†1200Ω	†530Ω	● 500KΩ		
V11	6BE6	15K	0Ω	.1Ω	0Ω	70K	†47K	10Meg		
V12	12B4A	■1500Ω	2.2Meg	.1Ω	0Ω	0Ω	TP	2.2Meg	NC	†480Ω
V13	6CN7	3900Ω	1.5Meg	1Meg	.1Ω	0Ω	560Ω	3.5Meg	†47K	.8Ω
V14	6SN7GTB	47K	▲220K	0Ω	30K	†66Ω	10K	0Ω	.1Ω	
V15	6BQ6GA	TP	.1Ω	TP	†15K	470K	TP	0Ω	0Ω	TOP CAP ▲8Ω
V16	6AX4GT	NC	NC	180K	NC	†66Ω	NC	0Ω	.1Ω	
V17	1B3GT	PINS 1-8 HAVE INF RESISTANCE								TOP CAP ▲238Ω
V18	5U4GA	NC	20K	TP	42Ω	NC	40Ω	TP	20K	
V19	21ALP4B	0Ω	†90K	PIN 6 ●70Ω	PIN 10 ▲47K	PIN 11 ●†220K	PIN 12 .1Ω			

† MEASURED FROM PIN 2 OF V18.
■ MEASURED FROM PIN 7 OF V4.
● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
▲ MEASURED FROM PIN 3 OF V16.
NC NO CONNECTION
TP TIE POINT



TUBE PLACEMENT CHART

ZENITH MODELS Y2229R, RU, Y2230E, EU, R, RU, Y2254M, MU, Y2256E, EU, R, RU, Y2263R, RU (Ch. 19Y22, U)

ALTERNATE VHF-UHF TUNER SCHEMATIC

MIXER A 6U8
OSC B 6U8
RF AMP 6BK7A
UHF OSC 6AF4A
(IF OUTPUT) To C24
(RF AGC) To Junct. Of R28 & C22
255V
VHF
UHF
UHF IF STRIP
FINE TUNING
THRU
If Metal Strap Is Not Used, Wattage Rating Must Be Doubled.
Crystal Mixer
Distr. Cap.
Channel Bracket
RF Strip Used On Channels 4 Thru 13
RF Strip Used On Channels 2 & 3 Only.
UHF-VHF ANT. TERMINAL BOARD
UHF Tuner Part No. S-23115, VHF Tuner Part No. S-23113, Used With UHF Models
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6BK7A	
V2	Mixer-Oscillator	6U8	
V3	1st Video IF Amplifier	6CB6	
V4	2nd Video IF Amplifier	6CB6	
V5	3rd Video IF Amplifier	6CB6	
V6	Video Output	12BY7	
V7	AGC Keying-Vert Mult	12AX7	
V8	Sound IF Amplifier	6AU6	
V9	Audio Detector	6BN6	

ITEM No.	USE	TYPE	NOTES
V10	Audio Output	6AQ5	
V11	Sync Separator	6BE6	
V12	Vert Mult - Vert Output	12B4A	
V13	Horiz. Phase Det - Horiz AFC	6CN7	
V14	Horiz. Osc - Horiz Disch	6BN7GTB	
V15	Horiz. Output	6BQ6GA	
V16	Damper	6AX4GT	
V17	HV Rectifier	1B3GT	
V18	LV Rectifier	5U4GA	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	ZENITH PART No.	RCA PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V19	21ALP4B ①	21ALP4A ①	21ALP4A ①	21ALP4A ①	1. Aluminized ② Silver screen "B5"
				21ALP4A ②	
				21ALP4 ②	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP	VOLT	ZENITH PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	●40	400	22-2347	AFH4-40-45	C037	FP378	TMT-43	Q-365	R2117 *
B	●40	400			* BR202	* TC72	TD-25-35	MT-4540	
C	40	400							
D	20	25							
C2A	●4	350	22-2346	AFH3-180-40					R2116 *
B	.05	50							
C	●10	475							

*Non-catalog item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP	VOLT	ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	3 5-8		22-2321							
C4	1000			BPD-001	DD-103	K069	501-001	DC-521	518K-D1	
C5	3 4		22-2598							
C6	800		22-2577							
C7	800		22-2577							
C8	800		22-2577							
C9	800		22-2577							
C10	65-3 5		22-2453							
C11	800		22-2531	BPD-0006	DD-501	C067	811-021		5GA-T8	
C12	800		22-2577							
C13	125		22-2581	N750-EH20	TCM-120	N064	NP0L-121		5TCU-T12	
C14	19		22-2408							
C15	6-3		22-2304							
C16	2		22-2434							
C17	5-8		22-2499							
C18	3 4		22-2592							
C19	800		22-2577							
C20	200		22-2583							
C21	800		22-2577							
C23	1000		22-3	BPD-01	DD-103	K082	811-01	DC-511	518K-B1	
C24	.15	200	22-2147	P388M-15		CUB4P15		DC-521	2TM-P15	
C24	470		22-5	BPD-00047	DD-471	K047	811-071	UC-5547	5GA-T47	
C25	17		22-2584		TCZ-18	Z033	NP0K-180			
C26	10		22-2550		TCZ-30	Z038	NP0L-300			
C27	24		22-2451	NPO-DIS 2		Z016	NP0A-RR2			
C28	24		22-2515	NPO-DE25	TCZ-24	Z025	NP0L-240	ZT-5425	5TCC-Q25	
C29	15		22-2500							
C30	33		22-2309	EH330	D6-331	TP43	GP3L-331		5GA-T33	
C30A	1000		22-21	BPD-EK001	DD3-102	DK069	815-001	DCD-531	518K-ED1	
B	1000									
C32	470		22-2302	SI470	D6-471	TP46	GP3K-471	UC-5347	5GA-T47	
C33	1000		22-11	BPD-001	DD-102	K069	811-001	DC-521	518K-D1	
C34	470		22-1524	SI470	D6-471	TP46	811-071	UC-5347	5GA-T47	
C35	470		22-2217	SI470	D6-471	TP46	811-071	UC-5347	5GA-T47	
C36	1000		22-2123	BPD-001	D6-102	TP62	GP2L-102	UC-521	5GA-D1	
C37	4 5		22-2523							
C38	7		22-2375		TCZ-6S5	Z014	NP0A-6R5	ZT-5565	5TCCB-V6S	
C39	022	200	22-1781	BPD-03	DF-303	CUB4E33	617-03	PT4133	3TM-S22	
C40	47		22-2467							
C41	1	200	22-1777	P388M-1	DF-104	CUB2P1		PT401	2TM-P1	
C42	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	518K-B1	
C43A	1000		22-21	BPD-EK001	DD3-102	DK069	811-001	DCD-531	518K-ED1	
B	1000									
C44	1		22-2343	NPO-DE1	TCZ-1R3	T206	NP0A-030	ZT-555	5TCCB-V1S	
C45	50		22-2460	SI50	TCZ-50	Z034	NP0-S38-500	ZT-545	5TCC-Q5	
C46A	1000		22-21	BPD-EK001	DD3-102	DK069	815-001	DCD-531	518K-ED1	
B	1000									
C47	0		22-2371							
C48	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	518K-B1	
C49	10000		22-3	BPD-01	DD-103	K082	811-01	DC-511	518K-B1	
C50	470		22-5	BPD-00047	DD-471	K047	811-071	UC-5347	5GA-T47	
C51	2200		22-3	BPD-0022	D6-221	K073	811-0022	UC-5333	5GA-D22	
C52	39		22-2706	N750-DJ39	TCZ-39	N031	NP0K-390			
C53	3300		22-11	BPD-0033	D6-332	K077	811-0033	UC-5233	5HK-D33	
C54	470		22-5	BPD-00047	DD-471	K047	811-071	UC-5347	5GA-T47	
C55	3300		22-11	BPD-0033	D6-332	K077	811-0033	UC-5233	5GA-D33	
C56	21		22-2459		TCZ-21	Z021	NP0L-210			
C57	47	200	22-2168	P388M-47		CUB2P47		PT4047	2TM-P47	
C58	022	400	22-2621							
C59	1	400	22-2061	P484M-1	DF-104	CUB4P1		PT401	4TM-P1	
C60	0047	500	22-1849	1464-0047		1RSD47			MS-247	
C61	01	200	22-2565	1464-01		1DSE103		MC0475	MS-41	
C62	01	400	22-1846	BPD-01	D6-103	CUB4S1	GP3-333-103	PT4401	4TM-S41	
C63	047	100	22-1778	BPD-05	DF-503	CUB3S47		PT4347	3TM-S47	
C64	100		22-9	NPO-DJ100	TCZ-100	T230	NP0-333-101	ZT-551	5TCC-T1	
C65	120		22-2505	NPO-DJ120	TCZ-120	T232	NP0-333-121		5TCC-T12	
C66	4700		22-17	BPD-001	DD-103	K069	811-001	DC-531	518K-D1	
C67	470		22-16	BPD-0047	DD-473	K079	811-0047	UC-5347	5HK-D47	
C68	470		22-5	BPD-00047	DD-471	K047	811-071	UC-5347	5GA-T47	
C69	.01	300	22-1899	BPD-01	D6-103	CUB4S1	GP3-333-103	PT401	4TM-S1	
C70	.1	300	22-1777	P388M-1	DF-104	CUB2P1		PT401	2TM-P1	
C71	680	500	22-2288	1464-0068	DE-681	1HS7M8	811-681		MS-268	

CAPACITORS (cont)

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP	VOLT	ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	
C72	1500		22-3689	BPD-0015	D6-152	1W5D15	801-0015	DCD-5315	1FM-215
C73	1100			1464-0001		1R5D11			M5-211
C74	1000		22-3596						
C75A	1500		22-23	BPD-EK0015	DD3-152	DK071	831-0015	DCD-5315	518K-ED15
B	1000								
C76	.047	400	22-1775	BPD-05	DF-503	CUB4S47		PT4147	4TM-S47
C77	130	4000	22-3697						
C78	.15	600	22-2561	P468M-15		CUB4P15		PT4615	4TM-P15
C79	.1	600	22-2301	P468M-1	DF-104	CUB4P1		PT401	4TM-P1
C80	82	3000			DD3R-820				
C81	75	3000	22-3688		DD30-750				

Note 1. Some versions may use 1000MMF unit (part #23-2183) in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA						INSTALLATION NOTES
	RESIST ANCE	WATTS	ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.		
R1A	1Meg	½	63-3419	B-70-S	A47-1Meg-Z	QU1-137	U53	Volume-Note 1	
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A	
C	Switch		Not Req.	Not Req.	SWZ-12	TA-1	US-36	Attach to R1A	
R2A	1Meg	½	63-3658	AB-70	A47-1Meg-Z	QU1-137	U53	Tone	
B	Shaft		Not Req.	AK-4	KS8-3	Not Req.	Not Req.	Attach to R2A	
R3	500Ω	½	63-3301	SVP-999				Contrast - wirewound	
R4A	2000Ω	½	63-3588	AB-8	A47-2000-B	QU1-113	PTA352L	Vert. Linearity	
B	Shaft		Not Req.	AK-1	FK3-1/4	BQ	Not Req.	Attach to R4A	
R5A	750Ω	½	63-3299	AB-66	A47-750K-B	QU1-136	U54	Vert. Hold	
B	Shaft		Not Req.	AK-4	KS8-3	Not Req.	Not Req.	Attach to R5A	
R6A	15K	½	63-3978	AB-20	A47-15K-B	QU1-118	TA351L	AGC	
B	Shaft		Not Req.	AK-1	FK3-1/4	BQ	Not Req.	Attach to R6A	
R7A	200K	½	63-3572	AB-50	A47-200K-B	QU1-129	U43	Brightness	
B	Shaft		Not Req.	AK-4	KS8-3	Not Req.	Not Req.	Attach to R7A	
R8A	7.5Meg	½	63-3948	4AB-89	4A47-7.5 Meg-S	4QU1-163	4U83	Height	
B	Shaft with 14Meg stop		Not Req.	AK-1	FK3-1/4	BQ	Not Req.	Attach to R8A	
R9A	2.5Meg	½	63-3811	AB-83	A47-2.5Meg-S	QU1-338	TA350L	Focus - Note 2	
B	Shaft		Not Req.	AK-1	FK3-1/4	BQ	Not Req.	Attach to R9A	
R10A	7.5Meg	½	63-3819	AB-96	A47-7.5Meg-B	QU1-163	U83	Focus	
B	Shaft		Not Req.	AK-1	FK3-1/4	BQ	Not Req.	Attach to R9A	
R11A	4.5Meg	½	63-3168	AB-87	A47-4.5Meg-S	QU1-141	TA34L	Fringe Lock	
B	Shaft		Not Req.	AK-1	FK3-1/4	BQ	Not Req.	Attach to R10A	
R11	500Ω	3	63-3364		19-500-50			Burn-in00 stop wire wound	

Note 1. Some versions will use an alternate control part #63-3357 in this application.
Note 2. Some versions will use an alternate control part #63-3918 in this application.
● Connect a 1Meg resistor in series with the right hand terminal of the control and the lead connecting to the same terminal of the original control (control viewed from shaft end, terminals down).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R12	22K		63-1841	BTS-22K	
R13	47K		63-1855	BTS-47K	
R14	470		63-1729	BTS-47	
R15	470K		63-1897	BTS-470K	
R16	100K		63-1869	BTS-100K	
R17	100K		63-1869	BTS-100K	
R18	220Ω		63-1758	BTS-220	
R19	470Ω		63-1772	BTS-470	
R20	33K		63-1841	BTS-22K	
R21	470Ω		63-1771	BTS-470	
R22	10K		63-1828	BTS-10K	
R23	2200Ω		63-1799	BTS-2200	
R24	100K	3	63-3170	BTS-10K	
R25	68K		63-1862	BTS-68K	
R26	100K		63-1869	BTS-100K	
R27	7.5Ω	3	63-3600		
R28	2.2Meg		63-1926	BTS-2.2Meg	
R29	220K		63-1884	BTS-220K	
R30	220K		63-1884	BTS-220K	
R31	47Ω		63-1737	BTS-68	
R32	470Ω		63-1771	BTS-470	
R33	56Ω		63-1733	BTS-56	
R34	120K		63-1873	BTS-120K	
R35	120K		63-1873	BTS-120K	
R36	180Ω		63-1764	BTS-180	
R37	37K		63-1849		
R38	6800Ω		63-3633	46	
R39	2K		63-1831		Note 1
R40	18Ω		63-1708	BTS-15	
R41	470Ω		63-1772	BTS-470	
R42	5600Ω	2	63-3222	BTS-5600	
R43	120Ω		63-1742	BTS-120	
R44	220Ω	PS	63-1758	BTS-220	PS
R45	18K		63-1834	BTS-18K	
R46	33K		63-1848	BTS-33K	
R47	47K		63-1855	BTS-47K	
R48	82K		63-1866	BTS-82K	
R49	33K	3	63-1566	BTS-33K	
R50	15Ω		63-1708	BTS-15	
R51	680Ω	1	63-3290	BTA-680	
R52	220K		63-1884	BTS-220K	
R53	470K		63-1897	BTS-470K	
R54	100K		63-1870	BTS-100K	
R55	3300Ω		63-1806	BTS-3300	
R56	680K		63-1904	BTS-680K	
R57	180K		63-1890	BTS-180K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R58	100K		63-1870	BTS-100K	
R59	10K		63-1828	BTS-10K	
R60	680Ω		63-1770	BTS-680	
R61	22K	2	63-3141	BTS-22K	
R62	1.2Meg		63-1916	BTS-1.2Meg	
R63	100Ω		63-1786	BTS-100Ω	
R64	10K		63-1828	BTS-10K	
R65	470Ω		63-1772	BTS-470	
R66	680Ω	1	63-2390	BTA-680	
R67	220K		63-1884	BTS-220K	
R68	10Meg		63-1953	BTS-10Meg	
R69	470K		63-1897	BTS-470K	
R70	470K		63-1897	BTS-470K	
R71	68K		63-1862	BTS-68K	
R72	47K	3	63-1857	BTS-47K	
R73	150K		63-1877	BTS-150K	Note 3
R74	27K		63-1845	BTS-27K	Note 3
R75	220K		63-1884	BTS-220K	
R76	100K		63-1870	BTS-100K	
R77	47K		63-1855	BTS-47K	
R78	220Ω		63-1756	BTS-220	
R79	2.2Meg		63-1926	BTS-2.2Meg	
R80	620Ω	1	63-3281	BTA-620	
R81	150K		63-1877	BTS-150K	
R82	560Ω		63-1775		
R83	560Ω		63-1775		
R84	1Meg		63-1951		
R85	1Meg		63-1951		
R86	3900Ω		63-1810		
R87	5.6Meg		63-1943		
R88	10Meg		63-1953		
R89	47K		63-1184		
R90	560Ω		63-1775	BTS-560	
R91	10K	3	63-3165		
R92	33K		63-1841		
R93	47K		63-1855		
R94	180K	1	63-2313		
R95	33K		63-1831		
R96	180Ω		63-1764		
R97	470K		63-1897		
R98	100Ω		63-1744		
R99	15K	4			
R100	47K	3	63-3283	BTS-47K	
R101	1000Ω		63-1786		
R102	4.7Ω		63-1581	BW½-4.7	
R103	22K		63-1841	BTS-22K	
R104	220K		63-1907	BTS-220K	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA				
	PRI.	SEC 1	SEC 2	SEC 3	ZENITH PART No.	Halderson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC	550VCT	5V	6.3V	95-1469		P-9739	P-8334 ①		
	①1.67A	②.260A	③3A	④6.5A						

① Make new mounting bracket.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA								
		ZENITH PART No.	Halderson PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T3	Horiz. Output Trans.	B-32980 ①					A-8370 ④		26672 ⑬	A-10X ⑭
T3	Vert. Output Trans.	95-1694				V30T ⑮	A-8148 ⑮			A-10BX ⑭
T4A	Yoke (90°) Horiz. (23MM)	95-1443 ⑤	DF608	MDF-90 ⑥	297D ⑦ ⑧	Y90F12/67 ⑨	DY-12A		T-14 ⑩	T-10-1 ⑩
B	Vert. (42MM)	B-19696 ⑪								

① Complete assembly. Includes: Winding and terminal assembly, Zenith part #95-21562
Tertiary winding and terminal assembly, Zenith part #95-21564.

② Use 8 to 1 turns ratio
③ Connect as auto transformer.
④ Drill new mounting hole(s).
⑤ Cut and tape green lead.
⑥ Includes capacitor C80, resistors R82 and R83.
⑦ Yoke rear cover and centering device.
⑧ Use original rear cover and centering device.
⑨ Use original yoke damping network with capacitor C80 across terminals #3 and #7.
⑩ Connect horizontal yoke terminal #3 to horizontal output transformer terminal #2, horizontal yoke terminal #2 or #7 to resistor R101, horizontal yoke terminal #1 to capacitor C79.
⑪ This part may be superceded by Parts Manufacturer's introduction of special unit for this application

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halderson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
5					6		6
4					5		5
3					4		4
2					NC Sec. Note ⑫		NC Sec. Note ⑫
1					3		3
Special Notes →				⑫	⑫		⑫

⑫ To reduce yoke "ringing" connect resistor R101 in series with capacitor C80 across terminals #3 and #1 of horizontal yoke.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC	ZENITH PART No.	Halderson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T5	9.4KΩ	3.4Ω	95-1379	21000	A-2932	A-3879	24860	S-51X	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	QUAM PART No.	RCA TYPE No.	
SP1	8"	PM	3.4Ω	49-780 ①	8A5I	203S2	① Used in models Y2256R, U, Y2256E, Y2256E2, R2.
	5 1/4"	PM	3.4Ω	49-781 ② 49-793 ③	5AA1	217S1	② Used in models Y2239R, Y2230R, Y2230E.
	10"	PM	3.4Ω	49-758 ④	10AB1	226S1	③ Used in models Y2230R, Y2230E ④ Used in models Y2254M, Y2263R, RU.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	ZENITH PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Fil. Choke	0Ω		30-391				
L2	Neut. Coil	0Ω		20-431				
L3	RF Coil	0Ω		20-537				
L4	Conv. Grid Coil	0Ω		20-538				
L5	Conv. Shield	0Ω		20-539				
L6	Osc. Coil	0Ω		20-541				
L7	RF Choke	.4Ω		6-18859				
L8	Conv. Plate	7.5Ω		6-32702				Tapped @ 1.3Ω
L9A	1st. Video IF	.1Ω		6-21808				
B	41.25MC Trap	0Ω		6-21718			6236	
L10	47.25MC Trap	0Ω		6-21719			6225	
L11	39.75MC Trap	0Ω		6-21717			6234e	
L12	2nd Video IF	.1Ω	.1Ω	6-17907	17-5004e	TV-135m		
L13	3rd Video IF	.1Ω	.1Ω	6-19057				
L14	4th Video IF	.3Ω	.3Ω	6-20833				
L15	Series Peaking Coil	5.5Ω		6-17913	18-3093	TV-181	6177	96 Microhenries
L16	Shunt Peaking Coil	5.5Ω		6-21562	18-3160a	TV-184	6644a	180 Microhenries, Wound in Series on 2.7KΩ Resistor
L17	Series Peaking Coil	9Ω		6-21888	18-3094		6810	6.7 Microhenries
L18A	4.5MC Trap	12.5Ω		6-21493				
B	1st. Sound IF	1.2Ω						
L19	Series Peaking Coil	5.5Ω		6-21563	18-3135a		6153 a	136 Microhenries, Wound on 5.6KΩ Resistor
L20	2nd Sound IF	.3Ω	.3Ω	6-19062				
L21	Quadrature Coil	4.7Ω		6-19230			1480	

m Use Adaptor Plate.
a Series with 2.7KΩ Resistor
a Parallel with 5.6KΩ Resistor

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA							NOTES
	PRI.	SEC.	ZENITH PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No.	Ram PART No.	Thordarson PART No.	
L22	165Ω		S-19743	19-1577		6324				Tapped ⓐ 65Ω

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	ZENITH PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L23	.260A	66Ω	2.2 HY	95-1376	C5037 ①	C-2996 ①	C-2326 ①	26C44	C-23X

① Drill one new mounting hole.

FUSES

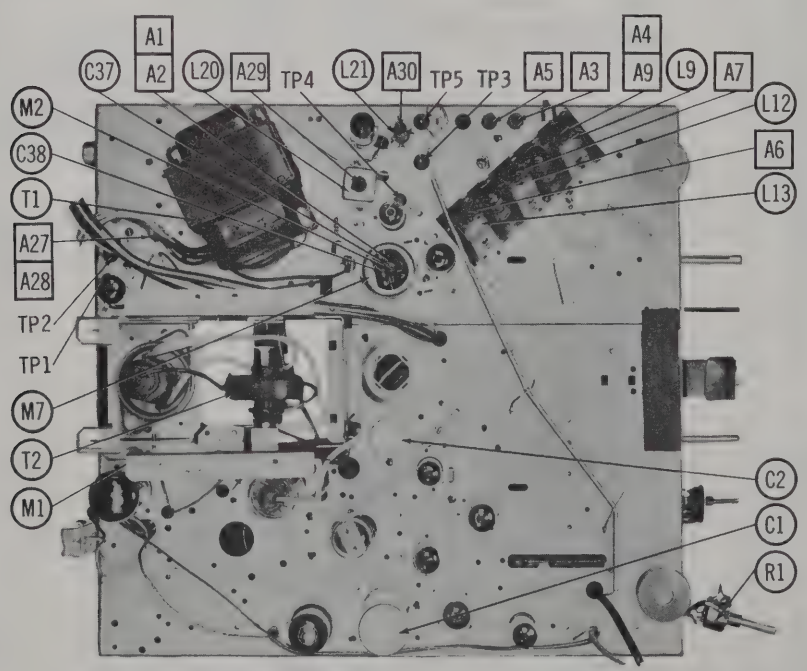
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ZENITH PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG S/B	1/4A 125V	136-23		313.250 (3AG S/B 1/4A)	357001	MDL 1/4	4405

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		ZENITH PART No.	SYLVANIA PART No.	
M2	1N64	103-1	1N60	Video Det. (Pigtail)

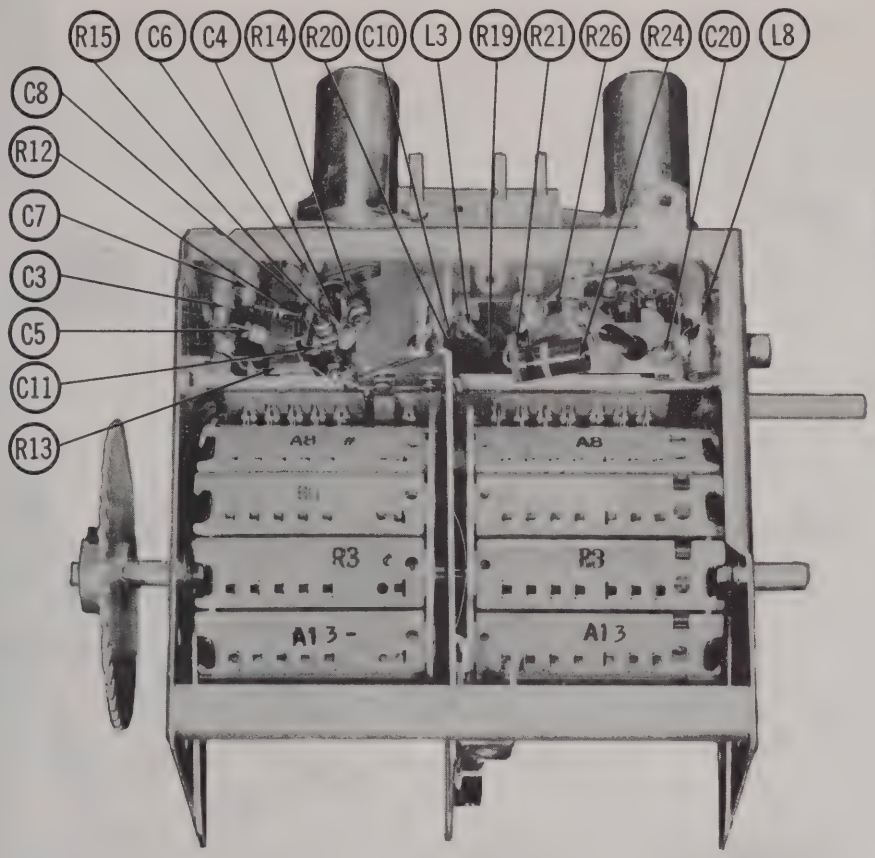
MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M3	Dial Light	100-166	#PR12
M4	Tuner	S-21735	VHF (12 Position) VHF Models Only.
	Tuner	S-23113	VHF (13 Position) VHF-UHF Models Only; Suffix "U" Follows Model Number
M5	Tuner	S-23115	UHF (VHF-UHF Models; Suffix "U" Follows Model Number)
M6	Trap		VHF Ant. Input Filter
M7	Video Det. Assy.	S-21686	Includes M2, L14, L15, L16, C37, C38.
M8	Integrator	87-5	Vertical
M9	Integrator	87-4	Vertical
M10	Centering Device	S-19898	Includes deflection yoke (T4) Rear Cover.
M11	Width Control	199-193	
M12	Ion Trap	S-22574	
M13	Correction Magnet	S-23241	
M14	Correction Magnet	S-23241	

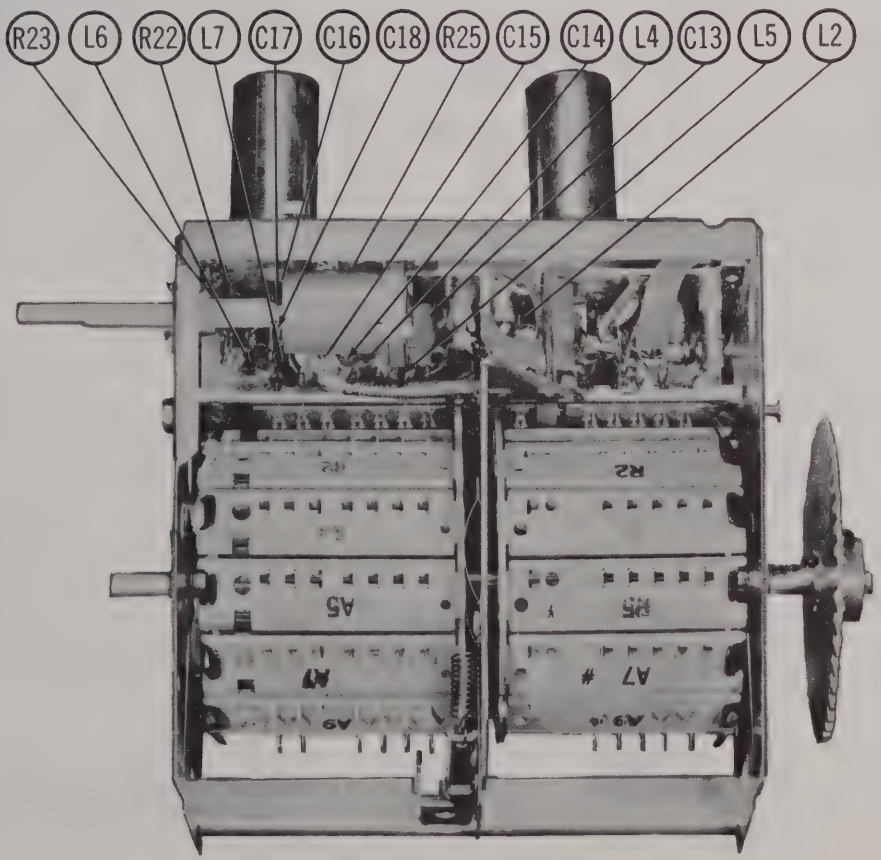


TP1 -.2V Video Det. Output
TP2 90V Cathode Bias (V19)
TP3 6.5V Bias
TP4 55V B+ (Plate - V8)
TP5 0V Audio Output

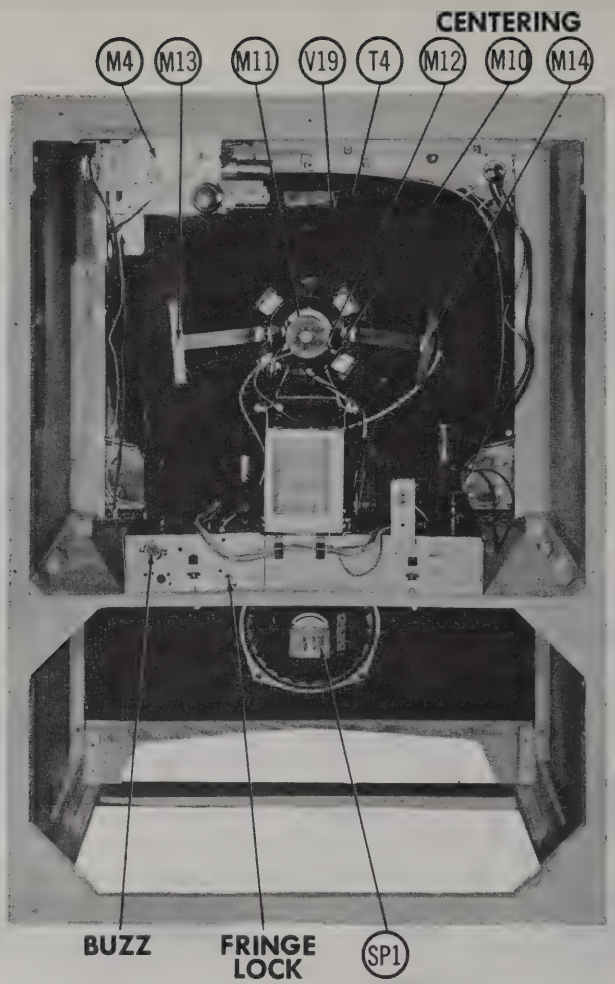
CHASSIS TOP VIEW



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



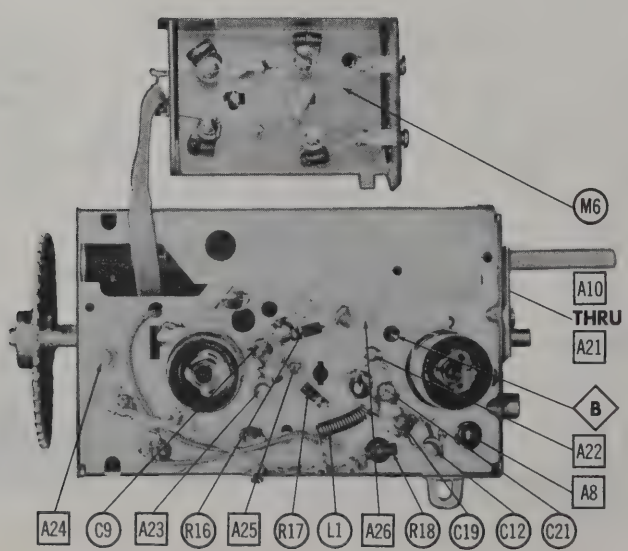
CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

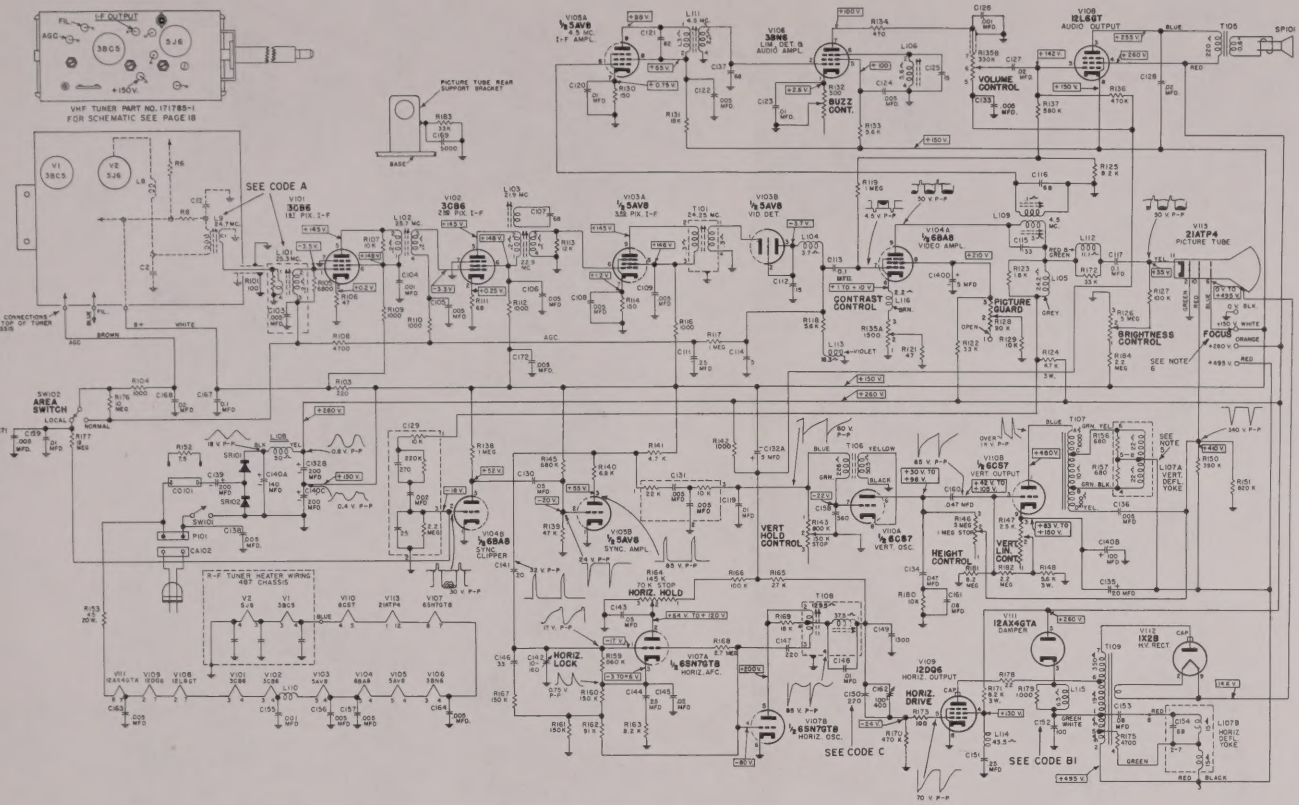
Turn the set on and tune in a TV station, preferably with a test pattern.

Adjust the horizontal hold (L22) located on the front of the chassis until the picture synchronizes horizontally.

Adjust the brass width sleeve on the neck of the picture tube for a picture slightly wider than necessary to fill the picture mask horizontally.



RF TUNER TOP VIEW



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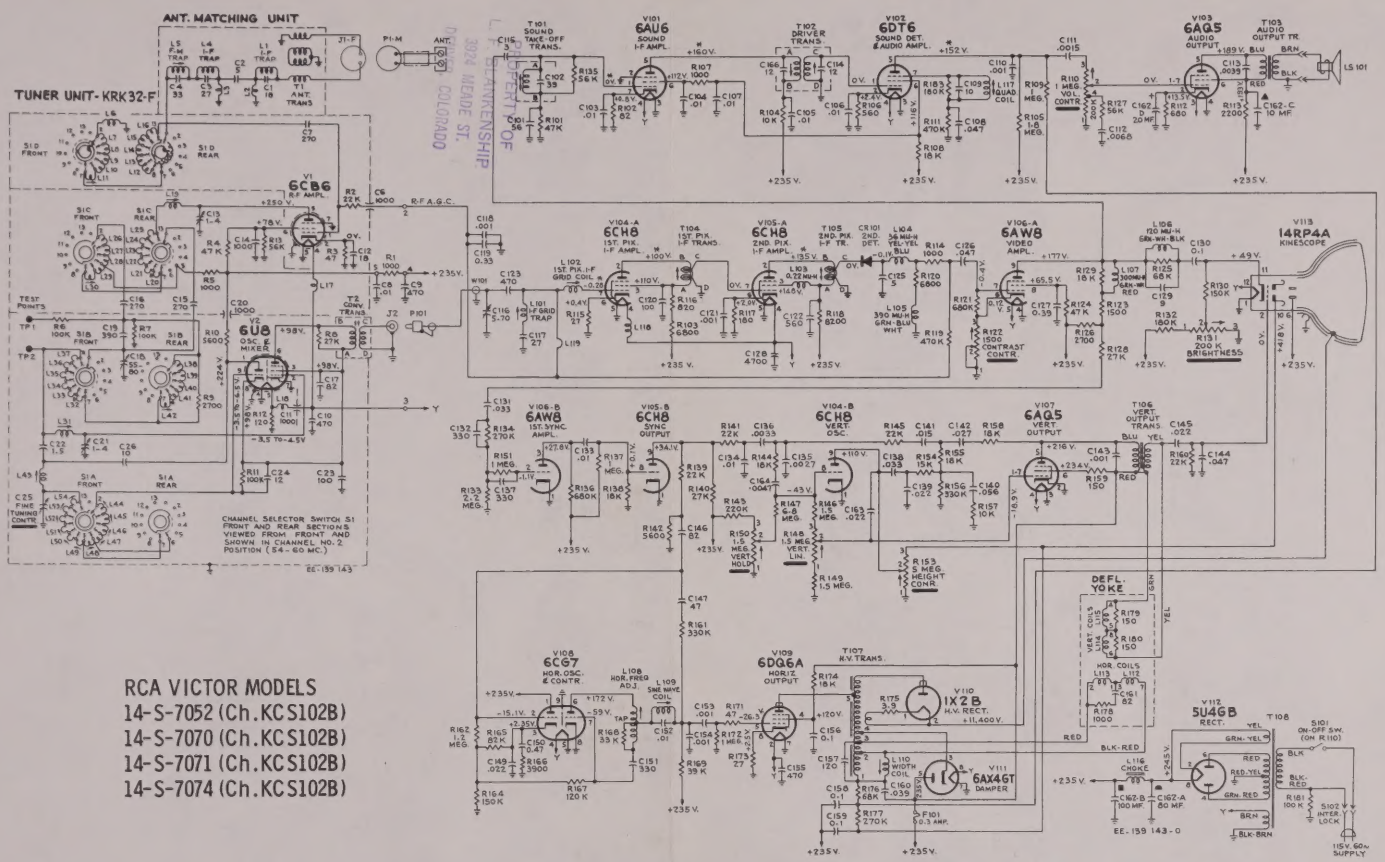

RCA VICTOR MODELS
14-S-7052 (Ch. KCS102B)
14-S-7070 (Ch. KCS102B)
14-S-7071 (Ch. KCS102B)
14-S-7074 (Ch. KCS102B)

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